

State of California
The Resources Agency
DEPARTMENT OF WATER RESOURCES
Northern District

SUMMARY OF OPERATIONS
FOR
WATERMASTER SERVICE IN NORTHERN CALIFORNIA
1997 Season



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FOREWORD

This report describes the watermaster service provided by the Department of Water Resources to areas in Northern California during the 1997 irrigation season. Authority for its preparation and publication is stated in the California Water Code, Division 2, Part 4, Chapter 7.

This report presents information about 1997 watermaster service in two sections. The first section gives introductory information about water rights, water supply, service areas, and watermaster duties. The second section describes the 15 active service areas, thirteen of which are served by Northern District Watermasters. The other two service areas, Indian Creek and Middle Fork Feather River, are in the vicinity of DWR's Beckwourth Subcenter and are served by watermasters of the Division of Operations and Maintenance, Oroville Field Division. Each of these service area descriptions gives detailed information on the area, the basis of watermaster service, sources of water supply, methods of distribution, 1997 water distribution, and personnel used.



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INTRODUCTION

Purpose and Benefits

The purpose of watermaster service is to distribute water according to established water rights. This is done by apportioning to the rightful users the available supplies in streams that have had water right determinations.

Distribution of water in watermaster service areas is the duty of the Department of Water Resources as directed in Part 4 of Division 2 of the California Water Code. Under watermaster service, water right holders are assured that their rights are protected without having to take legal action against other users.

A benefit of watermaster service to water users and the State is that court litigation and violent conflict, which happened in the past, are now rare. Also, available supplies of water are better used, as waste is reduced through careful management.

Because the water right holders and the State receive benefits from watermaster service, the costs of performing the service are shared. The State General Fund pays one-half of the cost of operating each service area and the water right holders in the service area pay the other half. Individual users' shares are determined in accordance with Article 3 of Chapter 7 of the above-mentioned Part 4 of Division 2 of the Water Code. Although this work is done as efficiently as possible, considerable public funds are needed to maintain skilled representatives in the field during the dry months of the growing season and to maintain administrative support. Most clients find the benefits of fair, reliable, and comparatively worry-free water distribution to be far superior to going without State Watermaster Service.

Determination of Water Rights

Many of the streams under State Watermaster Service have had their water rights defined by the courts under one of three adjudication procedures. These judgments establish each holder's rights in terms of rate of diversion, season of use, point of diversion, and place of use. They also establish priorities where each holder's rights are ranked according to the rights of all other decreed holders. Under this system, all rights of any one priority must be satisfied before water can be diverted to holders of lower priority rights. The determinations of the courts are called decrees.

Water rights decisions necessary for establishing watermaster service areas are accomplished by the following methods: (1) a statutory adjudication which defines all water rights on the stream; (2) a court adjudication which results when two or more

parties have their water rights defined; and (3) a court reference where the State Water Resources Control Board makes an investigation and reports to the court regarding water rights of the parties involved.

Statutory Adjudication

The California Water Code (Sections 2500-2900) gives a procedure where water users of any stream may petition SWRCB, Division of Water Rights, to make a legal determination of all water rights on that stream. If SWRCB finds that such a determination is in the best public interest, it proceeds with a legally binding decision. This results in a court decree that defines all water rights on the stream.

Figure 1 contains a map of the service areas, the number of decreed holders, and the amounts of water rights for each area. Table 1 lists the water right, Superior Court decrees, and the type of decree.

Court Adjudication

A less extensive way of defining water rights is the "court adjudication" procedure. This type of adjudication results when two or more parties seek a solution to their problem under civil law. A decision in a civil action determines only the water rights of the parties involved in the action and does not necessarily define all water rights on the stream. As a result, conflicts sometimes arise between decreed water right holders and those claiming longer-standing riparian or appropriative rights not specified in the decree.

Court Reference

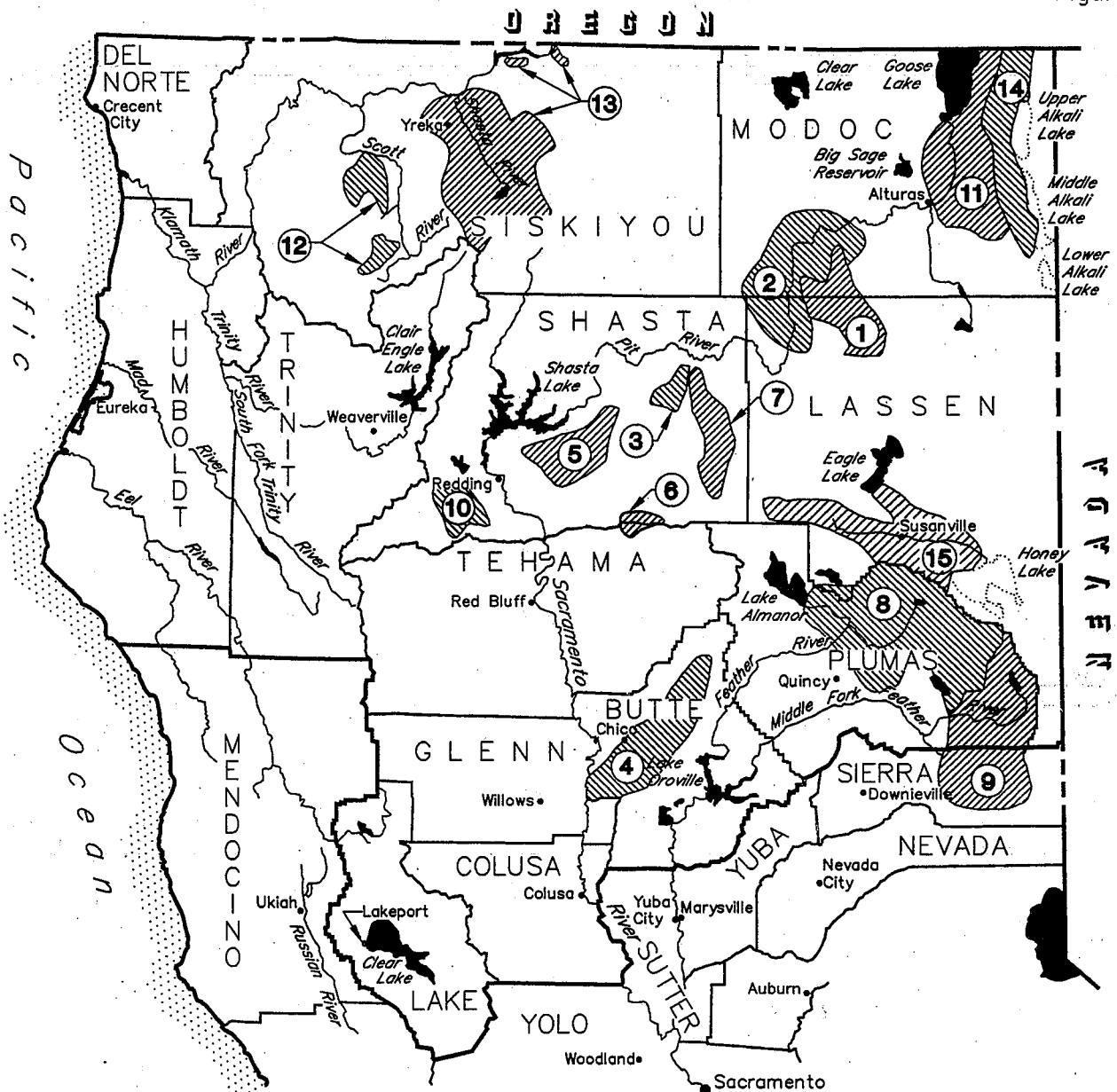
The court reference adjudication arises when a civil action is referred to SWRCB for a determination under authority contained in Sections 2000-2076 of the Water Code. SWRCB's report becomes the basis for the court's decision. As in court adjudications, a court referee determines only the water rights of the parties involved in the action.

Non-Judicial Decisions

A permit or license to appropriate can be issued by SWRCB, or agreement can be reached by consent of the water users involved.

Watermaster Service Areas

Figure 1



1997 Decreed Water Rights

Service Area	Number of Decreed Water Users	Total Decreed Water Rights ft ³ /s
1. Ash Creek	40	123.560
2. Big Valley	58	206.730
3. Burney Creek	11	33.090
4. Butte Creek	50	432.396
5. Cow Creek	104	60.426
6. Digger Creek	106	23.226
7. Hat Creek	88	135.744 1/
8. Indian Creek	53	96.715
9. M.F. Feather River	128	378.738
10. N.F. Cottonwood Creek	12	29.050
11. N.F. Pit River	114	244.264 2/
12. Scott River	103	127.600
13. Shasta River	217	625.637 3/
14. Surprise Valley	181	373.020
15. Susan River	229	353.909

1/ Average at Upper and Lower Rotation.

2/ Includes Pine Creek near Alturas.

3/ Includes Willow Creek near Ager which is based on a percentage of flow.

1313 (w/o 8, 9)

1499 total w. users

TABLE 1
WATERMASTER SERVICE AREAS, STREAM SYSTEMS
AND
SUPERIOR COURT DECREES REGULATING WATER DISTRIBUTION

Watermaster Service Area	Name of Stream System [#]	County	Number	Decree Date	Type*	Date Watermaster Service Area Created	Remarks
Ash Creek	Ash Creek and Lassen	Modoc **	3670	10-27-47	CR	4-03-59	Included as part of Big Valley service area 1949 through 1958.
Big Valley	Pit River	Modoc ** and Lassen	6395	2-17-59	S	11-13-34	Service provided in accordance with recorded agreement in 1934. Service area operated under recorded agreement 1935 through 1958, and under decree since 1959. Service discontinued on 12/31/81, and reactivated 5/1/90.
Burney Creek	Burney Creek	Shasta	5111	1-30-26	CR	9-11-29	
Butte Creek	Butte Creek	Butte	18917	11-06-42	S	1-07-43	
Cow Creek [#]	North Cow Creek	Shasta	5804	4-29-32	CR	10-17-32	
	Oak Run Creek	Shasta	5701	7-22-32	CR	10-17-32	
	Clover Creek	Shasta	6904	10-04-37	CR	1-21-38	
Digger Creek	Digger Creek	Shasta and Tehama **	2213	8-12-99	C	6-11-64	
			3214	5-27-13	C		
			3327	10-16-17	C		
			4570	2-24-27	C		
Hat Creek	Hat Creek	Shasta	5724	5-14-24	CR	9-11-29	Service provided in accordance with decree since 1924.
			7658	5-07-35	CR		
Indian Creek	Indian Creek	Plumas	4185	12-19-50	S	2-19-51	
Middle Fork Feather River	Middle Fork Feather River	Plumas ** and Sierra	3095	1-19-40	S	3-29-40	
North Fork Cottonwood Cr.	North Fork Cottonwood Cr.	Shasta	5479	6-09-20	CR	9-11-29	Service provided intermittently in the accordance with the decree since 1924.
North Fork Pit	North Fork Pit River and all tributaries except Franklin Creek New Pine Creek Davis Creek Franklin Creek Cottonwood Creek Pine Creek near Alturas	Modoc	4074	12-14-39	S	12-18-39	All stream systems consolidated into Fork Pit River service area 12-13-40.
		Modoc	2821	6-14-32	CR	6-22-32	
		Modoc	2782	6-30-32	CR	7-13-32	
		Modoc	3118	9-08-33	CR	9-14-33	
		Modoc	2344	5-03-40	CR	12-13-40	
		Modoc	Agreement	11-22-33	CR	1-12-35	
Scott River	French Creek	Siskiyou	14478	7-01-58	CR	11-19-68	French, Shackleford, and Wildcat Creek were combined in 1980 to form the Scott River service area. Sniklaw Creek was added on 4/1/81, and Oro Fino Creek in 7/1/84.
	Shackleford Creek	Siskiyou	13775	4-10-50	S	11-06-50	
	Wildcat Creek	Siskiyou	30662	1-16-80	S	5-01-80	
	Sniklaw Creek	Siskiyou	30662	1-16-80	S	4-01-81	
	Oro Fino Creek	Siskiyou	30662	1-16-80	S	7-01-84	
Shasta River	Shasta River	Siskiyou	7035	12-29-32	S	3-01-33	
	Willow Creek	Siskiyou	24482	4-28-72	C	6-22-72	
	Cold Creek	Siskiyou	29348	7-05-78	S	4-01-81	
Surprise Valley	Cedar Creek	Modoc	1206	5-22-01	C	6-19-26	All adjudicated stream systems in Surprise Valley were consolidated into the Surprise Valley service area on 1-10-39. Bidwell Creek was added on 3/16/60. Service started on Cedar Creek in 1926 in accordance with the decree. Service was provided on Soldier and Owl Creeks in 1929 in accordance with the decrees by order of the court. Cottonwood Creek was added on 7-1-77.
	Soldier Creek	Modoc	2343	2-15-23	C		
	Owl Creek	Modoc	2405	11-28-28	CR	9-11-29	
	Emerson Creek	Modoc	2410	4-29-29	CR	9-11-29	
	Mill Creek	Modoc	2840	3-25-30	CR	4-01-29	
	Deep Creek	Modoc	3024	12-19-31	CR	12-30-31	
	Pine Creek near Cedarville	Modoc	3101	1-25-34	CR	12-29-34	
		Modoc	3391	12-07-36	CR	1-13-37	
	Rader Creek	Modoc	3626	6-04-37	CR	6-12-37	
	Eagle Creek	Modoc	2304	4-05-26	C	1-10-39	
		Modoc	3284	11-05-37	CR		
	Cottonwood Creek	Modoc	6903	12-01-64	C	7-01-77	
Susan River	Bidwell Creek	Modoc	6420	1-13-60	S	3-16-60	
	Susan River	Lassen	4573	4-18-40	CR	11-10-41	
	Baxter Creek	Lassen	8174	12-15-55	S	2-16-56	
	Parker Creek	Lassen	8175	12-15-55	S	2-16-56	

* Explanation of type of decree:

C - Court adjudication (court makes determination from evidence submitted--no report of referee)

CR - Court reference (referred to State Water Resources Control Board for investigation and report)

S - Statutory adjudication (State Water Resources Control Board is petitioned by water users to make a determination of all water rights on a stream system)

** Decree entered by the Superior Court of this county.

[#] Major tributaries only; a complete listing is given in "Watermaster Service Areas and Stream Systems," page 6.

[#] Mainstem Cow Creek not in service area.

Watermaster Service Areas

Watermaster service is provided in areas where the rights have been defined by the superior court of the county, or by agreement, and where an unbiased qualified person is needed to properly apportion the available water according to the established rights. The Director of DWR creates watermaster service areas where these conditions exist, following a request by the users or by an order of the superior court.

The first watermaster service areas were created in September 1929. Before then, some watermaster service was provided in accordance with the Water Commission Act of 1913. About 50 streams in Northern California are now under State Watermaster Service. The newest service areas were created in 1980.

The counties and principal water sources of the various service areas in Northern California are listed in Table 2.

Of these 15 areas, 13 are in the Department's Northern District and two are in the Central District, served by watermasters assigned to the Division of Operations and Maintenance, Oroville Field Division.

Description of Region

The service areas are mainly in the mountainous northeastern part of the State where the growing season varies between about 100 and 140 days. Meadow hay and alfalfa are the principal crops under irrigation, although much land is used for pasturing livestock. Much irrigation is still done by gravity systems, with water users diverting from the streams at one or more diversion points. However, pumped diversions and sprinkler irrigation systems are becoming popular in some areas.

Watermaster Responsibilities

To ensure the proper distribution of water within the service area, each watermaster must ascertain the amount of water available and distribute it by amount and priority according to established water rights.

Authority

To accomplish this, the watermaster gets authority from the California Water Code and from provisions of pertinent court decrees or voluntary agreements to regulate the streams in the service area. The watermaster is authorized to supervise the design, construction, operation, and maintenance of diversion dams, headgates, and measuring devices.

Each watermaster supervises water distribution at 100 to 200 diversions in one or more service areas. The need for checking and regulating these diversion points increases substantially in years of short water supply.

TABLE 2
WATERMASTER SERVICE AREAS AND STREAM SYSTEMS
PRINCIPAL WATER SOURCES

Service Area	County	MAJOR STREAM and Tributaries ^{1/}	Reservoirs and Nontributary Streams
Ash Creek	Lassen, Modoc	ASH CREEK Butte, Rush, and Willow Creeks	
Big Valley	Modoc, Lassen	PIT RIVER Ash Creek	Roberts Reservoir
Burney Creek	Shasta	BURNEY CREEK	
Butte Creek	Butte	BUTTE CREEK	West Branch Feather River
Cow Creek	Shasta	COW CREEK ^{2/} North Cow, Clover, Oak Run, and Cedar Creeks	
Digger Creek	Shasta, Tehama	DIGGER CREEK	
Hat Creek	Shasta	HAT CREEK	
Indian Creek	Plumas	INDIAN CREEK Lights Creek, Wolf Creek	
Middle Fork Feather River	Plumas, Sierra	MIDDLE FORK FEATHER RIVER Little Last Chance, Smithneck, Webber and Fletcher Creeks; Spring Channels; Westside Canal	Little Truckee River
North Fork Cottonwood Creek	Shasta	NORTH FORK COTTONWOOD CREEK	Rainbow Lake
North Fork Pit River	Modoc	NORTH FORK PIT RIVER Parker Creek, Shields Creek	Cottonwood, Davis, New Pine Creek, and Pine Creek near Alturas
Scott River	Siskiyou	FRENCH CREEK Shackleford, Mill, Miners, Wildcat, Oro Fino, Sniktaw Creeks	Cliff and Campbell Lakes
Shasta River	Siskiyou	SHASTA RIVER Little Shasta River Sacramento River	Dwinnell Reservoir (Lake Shastina), Cold Creek, Willow Creek, and North Fork
Surprise Valley	Modoc	NONE (All creeks listed at right are unconnected)	Bidwell, Mill, Soldier, Pine near Cedarville, Cedar, Deep, Cottonwood, Owl, Rader, Eagle, and Emerson
Susan River	Lassen	SUSAN RIVER Willow Creek	Lake Leavitt, Hog Flat, McCoy Flat Reservoirs; Baxter and Parker Creeks

^{1/} Major tributaries only.

^{2/} Mainstem Cow Creek not in service area.

Control Devices

Permanent measurement and control devices, which the State requires (Water Code Sections 4100-4104) at each property owner's main point of diversion, are constructed by the water users under supervision of the watermaster. Installation of accurate, easily set, and lockable structures is a continuing objective of watermaster service because once they are built, conflicts among water users usually stop. Also, the watermaster's ability to check and set each diversion regularly is helped by well engineered and properly built structures.

Interpretation of Decrees

The watermaster is often called upon to make on-the-spot interpretations of various court decrees, agreements, etc. Because many of these documents were written more than 30 years ago, situations have developed that were not initially considered. Therefore, watermasters must use sound, careful, and practical judgment in attempting to reach workable solutions to water disputes. They must possess a good understanding of California water rights laws.

Water Supply

Water supply in watermaster service areas comes from unregulated runoff of small streams. Peak runoff--snowmelt in most cases--occurs in the spring, with relatively small streamflow occurring in the summer and early fall. Additional supplies from storage reservoirs and groundwater pumping are used in some areas to supplement natural streamflow, but State Watermasters do not supervise the use of groundwater in this part of the State.

In some service areas, the water supply must be predicted to determine the date watermastering will begin and, to some extent, the work force needed. DWR's Bulletin 120 series, "*Water Conditions in California*," is used to assist in these predictions.

Precipitation

The streamflow available for distribution is affected by total precipitation, amount of snowpack, air temperature, and the amount of rainfall received during the irrigation season. The latter is particularly important in the upper Pit River-Surprise Valley areas, where about 25 to 30 percent of the annual precipitation occurs in April, May, and June. Spring storms, which are accompanied by relatively cool temperatures, affect the water supply and the demand. Temperatures in the spring affect the demand for water and the manner snowmelt runoff occurs. A hot, dry spring depletes the water supply very

early, even in years of normal snowpack. A cold, wet spring can extend the supply well into the irrigation season, but cold temperatures retard the growth of crops and are not necessarily desirable.

Table 3 reports the quantity of precipitation at selected stations in the service areas during the 1996-97 water year. The seasonal precipitation gives an indication of the related water supply available for distribution, and a basis for comparing the current year's supply with a long-term average.

Table 4 shows the snowpack on April 1, 1997 on all snow courses and the snowpack on May 1, 1997 on selected courses. This information comes from DWR's data files.

Streamflow

The general water supply available for diversion within each watermaster area is determined from stream gaging stations placed at key locations in the main stream channels. Several major stations are installed and maintained by DWR and the U.S. Geological Survey as part of federal and State programs for collection of year-round streamflow records. In addition, several stream gaging stations are installed and operated by the watermasters during the irrigation season to provide supplemental information. Also, water stage recorders are often installed by watermasters in selected diversion ditches to further assist them in proper distribution of the various water right allotments.

Table 5 presents runoff data at selected stream gaging stations in or near the service areas.

TABLE 3

PRECIPITATION AT SELECTED STATIONS - 1996-1997 SEASON
(Units in Inches)

1996-97 Season
Long-term Average

Station	County	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Total	Percent of Normal
Lookout 3WSW	Lassen	0.00 1.50	0.00 2.65	3.09 2.75	5.43 2.98	11.45 2.99	1.18 2.82	4.03 1.72	5.09 1.70	0.81 1.12	1.22 0.30	0.07 0.52	1.13 0.77	33.50 21.82	154
Susanville 1WNW	Lassen	0.00 1.24	0.93 1.67	5.00 2.67	4.95 2.91	5.44 2.48	3.65 1.90	2.05 0.73	2.51 0.82	0.18 1.64	0.07 0.31	0.23 0.28	0.15 0.41	25.16 17.09	147
Alturas ^{1/} R.S.	Modoc	0.35 0.85	0.42 1.55	3.97 1.37	2.89 1.39	3.10 1.19	0.93 1.27	1.04 1.06	2.57 1.15	0.62 0.96	0.14 0.25	0.18 0.35	0.51 0.46	16.72 11.85	141
Cedarville	Modoc	0.28 1.03	0.69 1.81	3.92 1.58	3.87 1.65	2.75 1.35	1.38 1.40	1.55 1.07	1.58 1.00	0.79 0.81	0.08 0.29	0.31 0.37	0.39 0.49	17.59 12.85	137
Jess Valley	Modoc	0.19 1.36	0.10 2.15	6.74 2.00	4.69 1.83	2.09 1.82	2.16 1.93	1.82 1.89	2.48 2.03	1.41 1.56	0.00 0.43	1.34 0.56	n/a 0.79	23.02 18.07	127
Greenville R.S.	Plumas	0.00 2.33	0.38 5.23	8.74 6.07	8.14 7.15	10.72 5.92	4.48 5.37	4.98 2.69	6.02 1.66	0.10 0.86	0.40 0.26	0.22 0.35	0.13 0.70	44.31 38.59	115
Vinton 5SW	Plumas	0.00 0.39	0.48 1.73	3.16 2.03	4.09 2.20	4.57 1.79	2.06 1.61	1.60 0.81	n/a 0.96	n/a 0.63	0.02 0.35	0.62 0.36	0.42 0.45	17.02 13.31	128
Sierraville R.S.	Sierra	0.00 2.00	0.68 4.35	5.97 4.58	7.96 5.47	8.78 3.95	3.55 3.31	3.55 1.43	3.77 1.04	0.14 0.54	0.32 0.29	0.00 0.39	0.68 0.67	35.40 28.02	126
Hat Creek P.H. #1	Shasta	0.07 1.50	0.27 2.48	6.24 2.86	4.92 3.03	3.90 2.47	1.77 2.49	2.37 1.28	3.73 1.30	0.04 0.78	0.17 0.21	0.00 0.31	0.00 0.61	23.84 19.32	122
Redding, WSO	Shasta	0.00 2.24	0.26 5.21	10.81 5.51	9.66 6.06	9.06 4.45	1.84 4.38	2.54 2.08	4.28 1.27	0.14 0.80	n/a 0.87	n/a 0.31	n/a 0.61	38.59 19.32	117
Fort Jones R.S.	Siskiyou	0.03 1.40	0.42 3.41	8.44 4.13	7.67 5.24	2.89 2.58	1.55 2.15	2.43 1.11	1.89 0.72	0.24 0.75	0.30 0.34	0.18 0.54	0.48 0.62	26.52 22.99	115
Happy Camp R.S.	Siskiyou	0.30 3.57	2.73 8.79	13.29 11.35	11.93 11.74	11.32 7.39	4.73 6.81	7.34 2.63	4.56 1.38	0.50 0.84	0.31 0.36	0.00 0.40	1.33 0.94	58.34 56.20	104
Yreka	Siskiyou	0.06 1.24	0.53 2.87	9.22 3.74	7.43 2.98	2.21 2.04	1.40 3.14	2.05 1.00	1.62 0.81	0.61 0.94	0.99 0.43	0.19 0.60	0.73 0.67	27.04 20.46	132

^{1/} Alturas R.S. data ends October 31, 1994; new Alturas observer and gauge location beginning November 1, 1994.

E - Estimated

NOTE: Current season above line; long-term averages below line.

TABLE 4

SNOWPACK AS OF APRIL 1 AND MAY 1, 1997 AT REPRESENTATIVE SNOW COURSES

Watermaster Service Areas	Snow Course*	Calif I. D. No.	Elevation (in feet)	WATER CONTENT OF SNOW				
				April 1	April 1, 1997		May 1, 1997**	
				Average (in inches)	In inches	In Percent of April 1 Average	In inches	In Percent of April 1 Average
Ash Creek	Blue Lake Ranch (BLU)	28	6,800	10.6	8.9	84		
Burney Creek	Thousand Lakes (THL)	33	6,500	34.0	32.1	94	28.5	84
Butte Creek	Silver Lake Meadows (SVR)	45	6,450	30.2	25.2	83	19.2	64
Cow Creek	New Manzanita Lake (NMN)	343	5,900	7.3	10.6	145	0.0	0
Digger Creek	Burney Springs (BNS)	41	4,700	2.0	0.0	0		
Hat Creek	New Manzanita Lake (NMN)	343	5,900	7.3	10.6	145	0.0	0
Indian Creek	Independence Lake (IDN)	86	8,450	43.2	53.3	123	55.6	129
Middle Fork Feather River	Rowland Creek (RWL)	280	6,700	17.3	20.4	118	15.5	90
	Yuba Pass (YBP)	74	6,700	29.4	29.9	102	19.6	67
	Mount Dyer No. 1 (MDY)	48	7,100	25.3	23.7	94	22.9	91
North Fork Pit River	Cedar Pass (CDP)	30	7,100	17.3	15.8	91		
Scott River	Middle Boulder No. 3 (MB3)	5	6,200	27.2	24.3	89	13.6	50
Shasta River	Little Shasta (LSH)	2	6,200	19.8	23.0	116		
	Parks Creek (PRK)	1	6,700	36.5	30.2	83		
South Fork Pit River	Adin Mountain (ADM)	35	6,750	12.8	16.0	125	6.0	47

* Snow courses are listed in order of elevation within each geographical group of watermaster areas.

** Data collected only at courses listed.

TABLE 5

1996-97 RUNOFF AT SELECTED STATIONS
(Acre-Feet)

Average of	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Total	Long Annual Average	Percent Term
Bidwell Creek near Fort Bidwell	NR	NR	NR	NR	NR	NR	2,320	3,670	2,240	1,010	423	288	NR	18,000	NR
Burney Creek at Burney	887	900	4,177	4,625	12,750	8,596	10,340	9,394	2,698	1,196	762	722	57,047	57,000	100
Butte Creek near Chico	7,770	6,760	22,550	29,370	83,200	56,730	44,480	48,870	20,840	10,630	7,310	9,680	348,200	288,700	121
Hat Creek near Hat Creek	8,586	8,400	10,000	9,455	10,050	10,060	10,150	14,130	11,950	9,550	9,227	8,686	120,244	102,900	117
Pit River near Canby	5,050	4,380	14,420	23,250	97,000	58,020	47,930	48,220	15,000	5,480	4,470	5,220	328,500	174,800	188
Scott River near Fort Jones	4,040	5,140	67,360	78,590	156,700	89,100	89,160	95,100	34,990	8,900	1,980	1,660	632,800	451,300	140
Shasta River near Yreka	8,670	9,770	21,290	30,560	36,940	22,700	14,230	10,320	5,370	4,550	2,150	4,640	171,200	131,900	130
Susan River at Susanville	679	774	NR	NR	16,180	18,010	25,160	21,240	4,927	5,169	1,184	464	NR	————	NR

NR = No Record

SERVICE AREA DESCRIPTIONS AND 1997 WATER SUPPLY STATISTICS

SERVICE AREA DESCRIPTIONS AND 1997 WATER SUPPLY STATISTICS

This portion of the report consists of 15 sections, one for each service area active in 1997, presented in alphabetical order. Each of these sections presents a description of the service area, including location, geography, and general characteristics. Following this is a section entitled "Basis of Service," which includes such data as the case number, date, type of decrees, a brief summary of the decree or agreement that defines the water rights, the date the service area was created, and other related information.

These service area descriptions give data on the water supply, methods of distribution, significant events of the watermaster season, and daily streamflow records. The listings of water right holders are updated as of March 1 each year from county assessors' records.

As in previous years, watermaster service was activated on different dates in the various areas depending upon the streamflow conditions, the needs for the water, or, as on some streams, the terms of the decrees. Service was continued in all areas through the growing season as long as needed. The date service was started and ended in each service area and the name of the watermaster in charge are listed on Table 6.

TABLE 6

1997 Service Dates and Watermasters

<u>Service Area</u>	<u>Began</u>	<u>End</u>	<u>Watermaster</u>
Ash Creek	April 1	September 30	Ronald Libby
Big Valley	May 1	September 30	Michael Faber
Burney Creek	May 1	September 30	Michael Faber
Butte Creek	April 1	October 15	James P. Langley
Cow Creek	May 1	October 30	James P. Langley
Digger Creek	June 1	September 30	James P. Langley
Hat Creek	May 1	October 28	Michael Faber
Indian Creek	March 26	October 1	Charles D. Hand
M. F. Feather River	March 15 April 18	September 30 September 30	Ronald A. Vanscoy Ralph D. Howell
N. F. Cottonwood Creek	June 1	September 30	James P. Langley
N. F. Pit River	April 1	September 30	Ronald Libby
Scott River	April 1	September 30	Keithal B. Dick
Shasta River	April 1 April 1	September 30 September 30	Keithal B. Dick Lester L. Lighthall
Surprise Valley	March 19	September 30	Danny Cervantes
Susan River	March 1	November 1	Virgil D. Buechler

ASH CREEK WATERMASTER SERVICE AREA

ASH CREEK WATERMASTER SERVICE AREA

The Ash Creek service area is in Modoc and Lassen Counties near the town of Adin, about 100 miles northeast of Redding via Highway 299E. The major sources of water are Ash Creek and three tributaries; Willow, Rush and Butte Creeks. Ash Creek rises in Ash Valley in the southeastern part of the service area and flows northwest about 18 miles to its confluence with Rush Creek, then southwest to the town of Adin, and then westerly to Ash Creek Swamp and Pit River. Butte and Willow Creeks head in the mountains to the east and flow northwest into Big Valley. Butte Creek meets Ash Creek near the head of the Valley at Adin. Willow Creek flows into Ash Creek about 3 miles farther west, near the head of Ash Creek Swamp. The valley floor elevation is about 4,200 feet.

Basis of Service

The rights on this creek system were determined by a court reference and set in Decree No. 3670, Modoc County Superior Court, dated October 27, 1947. From 1949 through 1958, Ash Creek was included as a part of Big Valley Watermaster Service Area. The Ash Creek service area has been served separately since April 3, 1959.

About 85 percent of the water rights in the service area are in Big Valley, west of the town of Adin. The rest are along the upstream tributaries and in Ash Valley, east of Adin. The part of Big Valley served is about 10 miles long by 6 miles wide, extending from Adin to the confluence of Ash Creek and the Pit River. The Ash Creek Decree establishes the number of priority classes on the individual streams within the service area as follows: Ash Creek - five, Willow Creek - four, Rush Creek - one, and Butte Creek - two. Each of these streams is independently regulated.

Water Supply

The water supply for Ash and Rush creeks comes mainly from snowmelt, because most of the watershed is between 5,000 and 6,000 feet in elevation. Willow Creek and Butte Creeks get much of their water from springs. These creeks normally have enough water to satisfy demands until about June 1, after which the supply decreases rapidly. By the end of June, Ash Creek normally has receded to about 20 cubic feet per second (cfs), and Butte Creek is less than 1 cfs. The flow of these creeks remains nearly constant for the rest of the season. Records of the daily mean discharge of stream gaging station, Ash Creek at Adin, is presented in Table 7. The flow in Willow Creek above Diversion No. 92 and 93 is presented in Table 8.

Method of Distribution

Irrigation from Ash Creek and its tributaries uses numerous small dams to divert flow into systems of ditches. The ditches deliver the water to the various fields for spreading. Wild flooding is the method most used, but some ranchers have checks and ditches and some use pumps to operate sprinklers or to lift water to higher spreading ditches. In some cases, runoff water is captured and reused before it returns to the stream.

1997 Distribution

Watermaster service began in the Ash Creek Watermaster Service Area on April 1 with Ron Libby serving as Watermaster. Due to a physical problem Mr. Libby was unable to continue after April 6. George Fitzmorris, an experienced Ash Creek Watermaster, served as a substitute until July 1, when Mr. Libby returned and completed the season.

Heavy winter rains that caused extensive flooding in January created ample flows when the season started on April 1, 1997.

Ash Creek

Fifth priority water was available through May then decreased to first priority the end of June and stayed constant the rest of the watermaster season.

Willow Creek

The flow was adequate to meet all demands until early July when it dropped to 4 cfs in requiring regulation to get full allotment to the last users. The stream hit a low flow of 3.3 cfs on August 7.

Rush Creek

Full priority water was available until the first part of June then gradually decreased to 3.7 cfs (70 percent on first priority) by the middle of July and remained constant the rest of the watermaster season.

Butte Creek

Surplus water was available through the middle of July, the flow gradually dropped to slightly less than first priority by the end of the watermaster season.

ASH CREEK WATERMASTER SERVICE AREA

TABLE 7

1997 Daily Mean Discharge
(In cubic feet per second)

ASH CREEK AT ADIN

DAY	APR.	MAY	JUNE	JUL.	AUG.	SEP.
1	141	104	25	22	20	17
2	124	89	23	21	21	17
3	118	79	24	20	22	20
4	109	72	30	18	19	20
5	98	66	28	20	19	19
6	92	62	25	20	20	18
7	86	58	25	21	17	13
8	84	47	24	18	13	15
9	82	42	28	15	16	16
10	82	45	29	13	16	16
11	75	44	30	14	18	16
12	69	41	36	15	19	16
13	68	37	31	15	16	17
14	77	35	27	17	16	19
15	68	32	24	22	16	23
16	65	29	21	21	16	20
17	65	28	20	17	18	20
18	70	28	20	18	17	21
19	98	27	20	18	17	19
20	101	23	20	18	18	16
21	143	25	20	18	19	16
22	128	21	21	17	19	16
23	153	21	23	17	20	15
24	128	33	20	17	19	16
25	114	33	21	16	17	15
26	104	30	21	17	15	16
27	96	26	23	18	14	15
28	100	25	23	20	16	15
29	130	27	22	23	16	15
30	111	22	21	23	16	11
31	----	22	----	23	16	----
MEAN	99.3	41.1	24.2	18.5	17.5	16.9
AC-FT	5,909	2,525	1,438	1,135	1,073	1,008

ASH CREEK WATERMASTER SERVICE AREA

TABLE 8

1997 Daily Mean Discharge
(In cubic feet per second)

WILLOW CREEK ABOVE DIVERSIONS 92 AND 93

DAY	APR.	MAY	JUNE	JUL.	AUG.	SEP.
1	NR	8.5	6.4	5.3	4.0	4.3
2	NR	8.5	6.4	5.3	4.0	4.3
3	NR	8.3	6.7	5.1	3.8	4.3
4	NR	8.0	7.2	5.1	3.5	4.3
5	NR	8.3	6.7	5.1	3.5	4.3
6	NR	8.3	6.2	5.1	3.5	4.3
7	NR	8.0	5.9	4.8	3.3	4.3
8	NR	7.8	6.2	4.8	3.3	4.0
9	NR	7.7	7.0	4.8	3.3	4.0
10	NR	7.5	6.7	4.8	3.5	4.0
11	NR	7.5	6.4	4.8	3.5	4.3
12	NR	7.5	7.0	4.8	3.5	4.0
13	NR	7.2	7.0	4.5	3.5	4.0
14	11.1	6.7	6.7	4.5	3.8	4.3
15	NR	7.0	6.7	4.5	4.0	4.8
16	NR	7.0	6.4	4.3	4.3	4.3
17	NR	6.7	6.2	4.3	4.3	4.3
18	NR	6.7	5.9	4.0	4.3	4.5
19	NR	6.7	5.9	4.0	4.3	4.5E
20	NR	6.4	5.9	4.0	4.3	4.5E
21	NR	6.2	5.9	4.0	4.3	4.5E
22	NR	6.2	5.9	4.0	4.3	4.5E
23	17.4	7.0	5.6	4.0	4.3	4.5E
24	NR	7.8	5.3	4.3	4.3	4.5E
25	NR	7.2	5.1	4.3	4.0	4.5E
26	NR	7.0	5.1	4.0	4.0	4.5E
27	NR	7.0	5.1	4.0	4.0	4.5E
28	NR	6.7	5.1	4.0	4.0	4.5E
29	8.5	6.7	5.1	4.3	4.3	4.5E
30	8.5	6.4	5.3	4.3	4.3	4.5E
31	---	6.2	---	4.3	4.3	---
MEAN	NR	7.2	6.1	4.5	3.9	4.5E
AC-FT	NR	445	363	276	241	268E

BIG VALLEY WATERMASTER SERVICE AREA

BIG VALLEY WATERMASTER SERVICE AREA

The Big Valley Service Area is in Modoc and Lassen Counties in the vicinity of the towns of Lookout and Bieber, about 90 miles northeast of Redding via State Route 299E.

The Pit River is the major source of water regulated by the watermaster. The river enters the valley north of the town of Lookout and flows south through the western part of the valley and out at the southern end. The major area of use is along approximately 13 miles of valley floor, up to 6 miles wide, along the Pit River at an approximate elevation of 4,200 feet.

Basis of Service

The Big Valley Watermaster Service area was created on November 13, 1934 and service began with the 1935 season, under an agreement to determine water rights recorded in 1934. The water rights in this service area were set forth in Decree No. 6395, Modoc County Superior Court, a statutory decree, dated February 17, 1959.

Distributing the water on a continuous flow basis, as provided by the decree, has proven impracticable to the users who employ wild flooding or border irrigation practices because of the wide variation of flows. By mutual agreement, an alternative procedure allowing each user a definite amount of water in acre-feet for each/cubic foot per second of right allocated by the decree has been adopted. The watermaster estimates the probable amount of water available for the next 15 to 30 days and chooses the appropriate ac-ft/cfs ratio with a view to completing the rotation through the valley in not more than 30 days.

The irrigators using pumps and sprinklers have elected to receive their water on a more or less continuous flow basis. Over the years, different ways have been used to ensure that applications of small amounts over extended periods result in no advantage over the flood irrigators who use large amounts for short periods.

Water Supply

The flow in the Pit River at the head of Big Valley is from direct runoff, mainly snowmelt and return flow which is mostly from irrigation water released from West Valley Reservoir above South Fork Pit River and Big Sage Reservoir above Hot Springs Irrigation District.

The available water supply in the Pit River in Big Valley was historically adequate to satisfy all demands through about June 1. The irrigation practices in Hot Springs Irrigation District, about 20 miles upstream from Big Valley, have a significant effect on the available water supply in Big Valley. Water users in Hot Springs Irrigation District divert most of the flow of the Pit River for two- or three-weeks. In recent years, Hot Springs Irrigation District has improved the use and coordinated the distribution of its water, so releases from its system is less than 10 years ago, affecting Big Valley Irrigation District water stock water in August and September.

Several users, who irrigate crops by sprinkling, have drilled wells to supplement their water supply. Some of these users are several miles upstream from the place of use and the Pit River is used to convey it downstream to where it is pumped out. The users who irrigate by flooding have not changed nor improved their practices.

Roberts Reservoir, which stores runoff of a minor tributary to the Pit River near the upper end of Big Valley above Lookout, serves as a supplemental source of water to those users in the area who are members of the Big Valley Mutual Water Company. Water from this reservoir is released into the Pit River and distributed to members of the water company along with the natural flow to which they are entitled.

The daily mean discharge of the Pit River near Canby stream gaging station is presented in Table 9.

Method of Distribution

Most water users in the Big Valley Service Area irrigate on a rotation schedule, by wild flooding or by checks and borders. Large flashboard dams placed in the channel make it possible to use the large heads of water characteristic of the supply in the area. Some pumps are used for diversion, in ditches and into sprinkler systems. The ranches which irrigate by wild flooding must use large heads of water in order to cover unleveled or high ground. Some of the runoff is recaptured for use by downstream lands.

1997 Distribution

Watermaster service in Big Valley began May 1 and continued through September 30, with Michael E. Faber, Water Resources Technician I, as watermaster.

Spring snowmelt created a surplus of water which continued until June 20, when pump diverters were restricted to match daily flows at Canby, and third priority deliveries ceased. Seven flood irrigation rotations were delivered to the gravity flow diverters during the season.

A purchase of water from Hot Springs Irrigation District by Big Valley Water Users Association was approved and started from Big Sage Reservoir August 12 at 6:00 p.m.. This release was completed August 26 at 6:00 p.m.. Purchased water was conveyed by way of Rattlesnake Creek three miles to Pit River, and approximately 15 miles to

Lookout which makes losses virtually unknown. HSID indicates that 960 acre feet were released. BVWUA paid for 750 acre feet.

Roberts Reservoir was full on May 1. Between August 8 and August 18, a total of 450 acre feet was delivered from Roberts Reservoir to BVWUA shareholders.

Imports from groundwater wells into the Pit River totaled 1,091 acre feet during the season.

BIG VALLEY WATERMASTER SERVICE AREA

TABLE 9

1997 Daily Mean Discharge
(In cubic feet per second)

PIT RIVER NEAR CANBY

DAY	MAY	JUNE	JUL.	AUG.	SEP.
1	677	363	41	101	72
2	612	126	41	110	55
3	553	134	31	135	33
4	519	147	23	110	118
5	476	152	19	91	90
6	411	179	17	97	66
7	346	158	16	82	52
8	384	136	17	63	52
9	374	109	24	48	45
10	310	97	21	37	46
11	333	133	19	29	58
12	304	234	18	18	60
13	209	333	19	21	54
14	97	391	27	36	57
15	214	421	52	47	80
16	247	383	123	74	105
17	250	310	100	101	130
18	263	241	85	92	125
19	229	181	66	78	127
20	191	155	99	90	112
21	160	110	112	104	77
22	129	89	120	94	58
23	155	64	79	99	53
24	187	42	45	101	57
25	236	49	23	80	58
26	329	40	22	45	55
27	298	45	18	37	53
28	287	43	14	79	49
29	289	39	13	73	42
30	233	39	16	67	32
31	203	----	45	73	----
MEAN	307	158	44.0	74.3	71.0
AC-FT	18,850	9,410	2,710	4,570	4,230

BURNEY CREEK WATERMASTER SERVICE AREA

BURNEY CREEK WATERMASTER SERVICE AREA

The Burney Creek Service Area is in eastern Shasta County above and below the town of Burney. The source of water for this service area is Burney Creek, which enters the southern part of the service area and flows through Burney in a northerly to the Pit River. The part of the valley served by this stream is about 11 miles long and 2 miles wide and extends both north and south of Burney.

Basis of Service

The rights on this creek system were determined by a court reference and set in Decree No. 5111, Shasta County Superior Court, dated January 30, 1926. Watermaster service was provided on the creek from 1926 to 1929 under the Water Commission Act of 1913. The present service area was created on September 11, 1929.

The Burney Creek decree sets a rotation schedule of distribution. The water users have found it more beneficial to irrigate on a continuous-flow basis (one priority class plus surplus allotments), which is now normal practice. The water allotted to the Greer-Cornaz Ditch is distributed according to supplemental court decrees.

Water Supply

The water supply for Burney Creek comes from springs and snowmelt. Most of the watershed lies between of 4,000 and 7,500 feet on the northwest slopes of Burney Mountain. The creek normally has enough water for all demands until about the middle of June. The supply then gradually decreases until the end of July. For the rest of the irrigation season, runoff from perennial springs keeps the flow nearly constant at about 40 percent of allotments.

The daily mean discharge of Burney Creek near Burney is presented in Table 10. The stream gaging station on Burney Creek is downstream from four points of diversion, so the records do not show all of the available water supply of the creek.

Method of Distribution

Water is diverted from Burney Creek, in most cases, by means of low diversion dams into ditches that convey it to the individual users. Some users are using flood irrigation, while some of the lower users are pressurizing the water with low lift pumps and sprinkler irrigation.

1997 Distribution

Watermaster service on Burney Creek began on May 1 and continued through September 30, with Michael E. Faber, Water Resources Technician I, as watermaster.

The water supply in Burney Creek started the season slightly above normal. A surplus was available to all users until the third week of June at which time the snow runoff was nearly depleted. The Cayton Diversion Dam was installed about June 10, when 100 percent of the water rights were available. The flow decreased to 50 percent by the last week in July and down to 45 percent until late August when a series of thundershowers brought the flow up to 60 percent throughout September.

BURNEY CREEK WATERMASTER SERVICE AREA

TABLE 10

1997 Daily Mean Discharge
(In cubic feet per second)

BURNEY CREEK NEAR BURNEY

DAY	MAY	JUNE	JULY	AUG.	SEP.
1	73	29	21	11	15
2	67	29	21	11	14
3	64	31	21	11	16
4	61	55	19	11	15
5	58	49	20	11	14
6	55	39	18	11	13
7	52	34	18	11	13
8	50	30	17	12	13
9	49	32	17	11	14
10	48	32	17	12	14
11	47	32	17	12	14
12	44	30	16	12	13
13	40	30	16	12	13
14	38	30	16	12	17
15	36	28	16	11	25
16	35	27	16	12	18
17	35	25	16	12	17
18	34	24	16	12	18
19	31	24	16	12	16
20	30	24	15	19	15
21	30	23	15	15	16
22	29	23	15	14	15
23	39	23	15	13	15
24	48	22	15	13	15
25	41	22	15	14	15
26	37	22	15	15	15
27	36	21	15	13	15
28	35	20	14	14	15
29	33	20	13	15	16
30	32	21	12	15	16
31	30	----	11	15	----
MEAN	43.1	28.4	16.3	12.7	15.3
AC-FT	2,652	1,688	1,000	781	912

BUTTE CREEK WATERMASTER SERVICE AREA

BUTTE CREEK WATERMASTER SERVICE AREA

The Butte Creek service area is in Butte County a few miles southeast of the City of Chico. The watermaster service area runs about 11 miles along Butte Creek, starting about 4 miles east of Chico and running downstream to the crossing of the Western Canal. It contains about 20,000 acres of valley floor lands at an average elevation of 150 feet.

Basis of Service

The rights on this stream system were determined by a statutory adjudication and set forth in Decree No. 18917, Butte County Superior Court, dated November 6, 1942. The Butte Creek watermaster service area was created on January 7, 1943.

The Butte Creek decree established three priority classes: 1.) for summer use under Schedule 7; 2.) a surplus class inferior to the above rights; 3.) a special class for Hamlin Slough. Schedule 3 of the decree defines the rights for rediversion (Diversion 50) of foreign water delivered into Butte Creek from the West Branch of the Feather River.

On September 18, 1969, the State Water Resources Control Board granted permits for the following applications to take water from Butte Creek: application 22039, Rancho Esquon Partners; application 22321, Gorrill Land Company; application 22534, Garrison Patrick; and application 22564, Louis C. Camenzind, Jr. These appropriative rights are also under control of the watermaster and on the condition there is 60 cfs available for fish downstream.

Water Supply

Butte Creek, the major source of water, drains about 150 square miles of the western slope of the Sierra Nevada in the northeasterly part of Butte County above the watermaster service area. The highest elevation in the watershed is about 7,000 feet.

Normally, snowmelt produces sustained high flows in the creek until about the end of June, after which perennial springs above Diversion 50 continue to produce flows of more than 40 cfs. Additional water is imported for distribution from the West Branch Feather River by means of the Hendricks (Toadtown) Canal through De Sabla Reservoir and Powerhouse into Butte Creek.

Records of the daily mean discharge at stream gaging stations in the Butte Creek service area are presented in Tables 11, 12, and 13.

Method of Distribution

Water is diverted from Butte Creek by pumping and by gravity diversions. Parrott Investment Company, M & T, Inc., Dayton Mutual Water Company, Durham Mutual Water Company, Rancho Esquon Partners, and Gorrill R Ranch divert relatively large amounts of water by gravity into ditches leading to their individual distribution systems. Various methods of irrigation are in general practice, including contour checks, strip or border checks, basin checks, furrows, wild flooding, and sprinklers. The use of sprinklers has increased in the past few years, especially for orchards.

1997 Distribution

Watermaster service began April 1 in the Butte Creek Watermaster Service Area and continued until October 15 with James P. Langley, Water Resources Engineering Associate, as watermaster.

The water supply for the 1997 irrigation season was normal. The application rights that are in addition to the Butte Creek decree were not filled at all this year. The surplus class priority was partially filled throughout the growing season. The natural flow of Butte Creek was adequate to supply 100 percent of the first, second, and third priority allotments throughout the entire season.

There was no import water from the West Branch of the Feather River until June 9th due to a washout of the Toadtown Canal during the January floods. Even then there was only 57cfs measured at BW-12 Parshall Flume before dumping into the DeSabra forebay. The flow gradually declined to approximately 30 cfs at the end of the watermaster season.

M&T Incorporated and Parrott Investment, Company concerned about environmental issues on Butte Creek, helped by trading 40 cfs of their Butte Creek water rights for the right to pump an additional 40 cfs from the Sacramento River during critical fish migration periods. This 40 cfs left in Butte Creek bypassed all diverters in the watermaster service area during the 1997 season.

Western Canal Irrigation District began construction on a large siphon to bring their Feather River water under Butte Creek. They will eventually remove their diversion dam and will take their Butte Creek water from the Gorrill Diversion Dam. The White Ranch water will also be diverted out of the Gorrill Diversion Dam. The siphon, the 40 cfs trade, and work scheduled next year at the Durham Mutual Diversion Dam, Rancho Esquon Diversion Dam, and Gorrill Diversion Dam is being done because of concerns for the anadromous fisheries in Butte Creek.

BUTTE CREEK WATERMASTER SERVICE AREA

TABLE 11

**1997 Daily Mean Discharge
(In cubic feet per second)**

BUTTE CREEK NEAR CHICO

NO RECORD BECAUSE OF DAMAGE FROM JANUARY 1997 FLOOD

BUTTE CREEK WATERMASTER SERVICE AREA

TABLE 12

1997 Daily Mean Discharge
(In cubic feet per second)
BUTTE CREEK NEAR DURHAM

DAY	APR.	MAY	JUNE	JULY	AUG.	SEP.
1	289	209	71	79	43	37
2	276	183	75	57	49	47
3	279	152	81	50	50	60
4	285	147	133	46	49	58
5	276	142	106	40	47	45
6	264	135	94	34	46	41
7	258	133	86	36	64	40
8	255	121	81	37	64	41
9	258	123	105	37	52	38
10	250	124	123	38	47	35
11	249	121	117	40	44	34
12	246	118	106	43	45	47
13	243	113	107	43	44	54
14	245	111	102	37	45	55
15	243	105	98	34	43	77
16	242	102	92	33	44	66
17	239	99	88	35	45	61
18	245	100	85	34	44	62
19	703	100	79	35	45	56
20	485	98	78	37	71	51
21	564	86	78	38	74	48
22	492	85	76	37	59	47
23	481	99	72	37	55	46
24	407	121	75	38	56	44
25	347	99	71	37	55	47
26	316	89	67	39	35	46
27	276	84	66	41	30	44
28	246	81	63	42	27	40
29	247	81	68	39	31	39
30	226	76	75	38	33	40
31	----	72	----	35	30	----
MEAN	314	113	87.3	40.2	47.3	48.2
AC-FT	18,710	6,960	5,193	2,471	2,908	2,868

BUTTE CREEK WATERMASTER SERVICE AREA

TABLE 13

1997 Daily Mean Discharge
(In cubic feet per second)

TOADTOWN CANAL NEAR STERLING CITY ABOVE BUTTE CANAL^{1/}

DAY	APR.	MAY	JUNE	JULY	AUG.	SEP.
1	NF	NF	NF	62	77	36
2	NF	NF	NF	62	76	35
3	NF	NF	NF	58	71	32
4	NF	NF	NF	56	70	33
5	NF	NF	NF	55	71	33
6	NF	NF	NF	54	94	32
7	NF	NF	NF	54	104	31
8	NF	NF	NF	59	90	32
9	NF	NF	58	59	79	31
10	NF	NF	67	59	77	31
11	NF	NF	67	59	77	32
12	NF	NF	67	58	77	32
13	NF	NF	67	57	76	31
14	NF	NF	65	55	76	32
15	NF	NF	63	54	75	43
16	NF	NF	60	57	75	34
17	NF	NF	58	57	75	32
18	NF	NF	57	59	75	34
19	NF	NF	55	64	74	32
20	NF	NF	54	61	85	31
21	NF	NF	53	60	78	30
22	NF	NF	53	64	76	30
23	NF	NF	52	63	75	30
24	NF	NF	51	63	74	29
25	NF	NF	50	57	52	29
26	NF	NF	49	49	33	29
27	NF	NF	47	60	33	29
28	NF	NF	49	77	37	28
29	NF	NF	58	75	37	29
30	NF	NF	63	73	37	29
31	---	NF	---	73	36	---
MEAN	NF	NF	57	60.4	69.1	31.7
AC-FT	NF	NF	2,501	3,590	4,250	1,890

^{1/} PG&E station
NF = No Flow

COW CREEK WATERMASTER SERVICE AREA

COW CREEK WATERMASTER SERVICE AREA

The Cow Creek Service Area is located in central Shasta County in the foothills east of Redding. Water for this service area comes from three major creek systems. They are North Cow Creek (sometimes referred to as Little Cow Creek), Oak Run Creek, and Clover Creek. These creeks flow westerly to their confluence in the Millville-Palo Cedro area, then south to the Sacramento River east of the City of Anderson. The service area is generally a narrow strip of land on both sides of each of these creeks. In some cases, water is exported from one creek to the other.

Basis of Service

The water rights on each of these creek systems were determined by court references and set forth in separate decrees. Water rights for these creeks were set by Shasta County Superior Court decrees as follows:

<u>Creek</u>	<u>Decree No.</u>	<u>Date</u>
North Cow	5804	April 29, 1932
Oak Run	5701	July 22, 1932
Clover	6904	October 4, 1937

The North Cow Creek decree, which includes Cedar Creek, sets a rotation schedule of distribution. The water users have found it more beneficial to irrigate on a continuous-flow basis, which is now normal practice. Only one priority allotment was provided in each of the Cow Creek Service Area decrees, except for the Oak Run Creek decree, which contains a surplus allotment.

The Cow Creek Watermaster Service Area was created on October 17, 1932, including North Cow Creek and Oak Run Creek water rights. On January 21, 1938, the service area was expanded to include the Clover Creek rights.

Water Supply

Water for this service area comes mostly from springs and seepage, with some early snowmelt runoff. The watershed varies in elevation from 500 to 5,000 feet and consists

mainly of low, brushy hills that do not accumulate a heavy snowpack. Relatively large amounts of precipitation during the winter normally produce substantial seepage and springs that flow through the irrigation season. The creeks normally have sufficient water to supply all demands until late July. The supply then gradually decreases to an average of about 60 to 70 percent of allotments by around mid-September.

Method of Distribution

Water is diverted from the creeks, in most cases by means of low diversion dams, into ditches that convey it to the place of use. Lateral ditches are then used to spread it over the land. Irrigation has been on a continuous-flow basis instead of by rotation since 1934.

1997 Distribution

Watermaster service for North Cow Creek began on May 1 and continued through October 30 with James P. Langley, Water Resources Engineering Associate, as watermaster.

Cedar Creek

The flow in Cedar Creek was adequate to supply all demands throughout the season.

Clover Creek

The flow was adequate to supply 100 percent of all allotments throughout the season. There was zero flow past Millville Ditch Diversion Dam from July 16 until the dam was breached the last of September because of early rains.

North Cow Creek

The flow was adequate to supply over 100 percent of all allotments throughout the season. The Cook and Butcher Ditch Dam had zero flow past it from July 16 until the dam was breached the last part of September because of early fall rains.

Oak Run Creek

The flow was adequate to supply 100 percent of all allotments throughout the season.

DIGGER CREEK WATERMASTER SERVICE AREA

DIGGER CREEK WATERMASTER SERVICE AREA

The Digger Creek service area is in southeastern Shasta County and northeastern Tehama County.

Digger Creek forms part of the boundary between Shasta and Tehama Counties. It drains about 45 miles on the western slopes of the Sierra, just west of Lassen National Park. The creek flows west through the town of Manton to its confluence with North Fork Battle Creek. Manton, the only community in the area, lies about 40 miles northeast of Red Bluff.

Basis of Service

The rights to use of the waters of Digger Creek were determined by four court adjudications. Crooker Ditch, combined with the Harrison Ditch, may divert all the water in the creek at its point of diversion. Diversions below this point, though defined by decree, are not in the service area.

Four Tehama County Superior Court Decrees define the rights included in the service area. These decrees are listed in Table 15.

TABLE 15

DECREES DEFINING DIGGER CREEK WATER RIGHTS

<u>Case</u>	<u>Decree No.</u>	<u>Date Entered</u>
<i>Gransbury et al. vs. Edwards et al.</i>	2213	August 12, 1899
<i>Wells et al. vs. Pritchard et al.</i>	3214	May 27, 1913
<i>Harrison et al. vs. Kaler et al.</i>	3327	October 16, 1917
<i>Herrick et al. vs. Forward et al.</i>	4570	February 24, 1927

The four decrees have divided the water rights on the creek into two groups, the upper users and the lower users. The three upper users irrigate land alongside the stream so that all run off water returns to Digger Creek. The lower users are located within a 5-mile area. No runoff from the lower users returns to the creek.

The water rights of the three upper users are absolute and not related to those of lower users; therefore, allotments are not reduced proportionally as Digger Creek flows decrease. Since the lower users have to stand all deficiencies, the upper users, in effect, have first-priority allotments and the lower users have second-and third-priority allotments.

Water Supply

Snowmelt contributes to the early runoff, but the summer streamflow is primarily from springs. In average runoff years, there is sufficient flow in Digger Creek, with careful regulation, to satisfy all decreed allotments throughout the irrigation season, but serious deficiencies occur in dry years.

Method of Distribution

Irrigation is done mainly by wild flooding, although border checks and sprinklers are used on a few fields. Small diversion dams are placed in the stream channel to divert water into ditches for conveyance to the fields.

1997 Distribution

Watermaster service on Digger Creek began on June 1 and continued until September 30 with James P. Langley, Water Resources Engineering Associate, as watermaster.

There was sufficient water to meet all demands throughout the entire watermaster season with approximately 4 cfs past the last diversion at the end of September.

HAT CREEK WATERMASTER SERVICE AREA

HAT CREEK WATERMASTER SERVICE AREA

The Hat Creek Service Area is in the eastern part of Shasta County, north of Lassen Volcanic Park. Hat Creek flows north and is the only source of water in the service area. The place of use is Hat Creek Valley, which is about 20 miles long and 2 miles wide, running north from about 3 miles south of the town of Old Station to the confluence with Rising River. The irrigable lands, which consist primarily of volcanic ash, are interlaced with large volcanic rock outcropping.

Basis of Service

Hat Creek water is distributed under provisions of court reference adjudications which resulted in Decree No. 5724, dated May 14, 1924, and Decree No. 7858, dated May 7, 1935, Shasta Superior Court. Decree No. 5724 established irrigation and nonirrigation allotments for 18 periods of rotation between "upper" and "lower" user groups from May 1 to October 28 annually. Decree No. 7858 established three additional water right allotments for continuous irrigation, May 1 through October 28, and allotments for October 28 to May 1 annually for all users. These latter rights are not normally supervised by the watermaster.

Watermaster service in the Hat Creek area has been provided in accordance with the decree since 1924. The existing service area was created on September 11, 1929.

Decree No. 5724 defines the allotments in the separate schedules: upper and lower users, requiring 10-day rotations beginning at 6 a.m., May 1, and ending at 6 a.m., October 28. All water rights have the same priority, with the surplus flows distributed according to the users that are on rotation. The upper users' water rights require 153.135 cfs and lower users require 166.285 cfs. When the upper users are being served, the lower users receive a minimum flow for stock water.

Water Supply

The water supply for Hat Creek comes from snowmelt runoff from Lassen Peak and from large springs. Snowmelt creates a high flow during May and June, but most of the summer supply comes from large springs that decrease only slightly in output. Only after a series of dry years does the flow of these springs decrease below 75 percent of total allotments. Records of mean daily discharge of Hat Creek near Hat Creek are in Table 16. There is one major diversion above the recorder and is not reflected in this table.

HAT CREEK WATERMASTER SERVICE AREA

TABLE 16

1997 Daily Mean Discharge
(In cubic feet per second)

HAT CREEK NEAR HAT CREEK

DAY	MAY	JUNE	JULY	AUG.	SEP.
1	178	210	173	166	147
2	173	207	171	166	148
3	174	212	170	166	150
4	177	243	168	165	148
5	179	217	166	163	147
6	181	207	166	163	146
7	184	205	166	163	146
8	187	205	165	163	152
9	194	205	166	153	154
10	201	201	173	150	154
11	216	194	175	150	154
12	222	196	175	148	153
13	219	194	175	144	152
14	218	189	175	145	155
15	222	188	176	145	155
16	222	187	174	147	152
17	220	185	175	147	153
18	219	184	175	146	149
19	220	183	174	156	142
20	220	188	166	170	141
21	210	189	163	168	140
22	204	187	162	165	139
23	213	186	161	163	139
24	207	184	157	163	139
25	199	183	156	162	140
26	196	183	156	161	139
27	195	183	157	161	139
28	198	182	157	160	146
29	198	182	156	152	150
30	198	182	156	152	150
31	208	---	168	147	---
MEAN	202	195	167	157	147
AC-FT	12,400	11,580	10,280	9,652	8,765

Method of Distribution

Most irrigation in the area is done by wild flooding. Large heads of water are needed to cover the land rapidly, thereby preventing excessive loss from percolation in the porous soil. Diversion dams built across the creek divert water into large ditches. The fields, many of which have checks and borders, are then flooded from the main diversion ditches or from laterals. Several domestic rights are met by pumping directly from Hat Creek. Some ranchers have leveled their fields in recent years, thus improving their irrigation efficiency.

1997 Distribution

Watermaster service on Hat Creek began on May 1 and continued through October 28, with Michael E. Faber, Water Resources Technician I, as watermaster.

An above average snowpack and rainfall in the watershed through the summer and fall of 1997 provided good continuing flow. Heavy rainfall on top of a deep fresh snow pack during late December 1996 and early January 1997 caused land and glacial avalanches in the Lost Creek drainage of Mt. Lassen. Three times during the summer, trapped water was released naturally, causing sudden high water surges in Hat Creek and heavy sediment transfer.

The trial program of switching lower users rights with upper users to have a larger minimum flow in the lower stream continued again this season with success.

The percentages of available water for the upper and lower rotations during the 1997 irrigation season were as follows:

PERCENTAGE OF ENTITLEMENT

Period	Upper Rotation	Lower Rotation
May 1 - May 10	100	
May 11 - May 20		100
May 21 - May 30	100	
May 31 - June 9		100
June 10 - June 19	100	
June 20 - June 29		100
June 30 - July 9	100	
July 10 - July 19		100
July 20 - July 29	100	
July 30 - August 8		100
August 9 - August 18	100	
August 19 - August 28		95
August 29 - September 7	100	
September 8 - September 17		95
September 18 - September 27	100	
September 28 - October 7		95
October 8 - October 17	100	

INDIAN CREEK WATERMASTER SERVICE AREA

INDIAN CREEK WATERMASTER SERVICE AREA

The Indian Creek Service Area is in north central Plumas County near Greenville. The major sources of supply in the service area are Indian Creek and two tributaries, Wolf Creek and Lights Creeks. Indian Creek, along with minor tributaries, rises in the mountains east of the service area. It flows through Genesee and Indian valleys and past Taylorsville and Crescent Mills to where it joins the North Fork Feather River. Indian Creek is joined on the north by Lights Creek in southeast Indian Valley and by Wolf Creek in the northwest part of the valley. The major place of use is in Indian Valley, an irregular-shaped area of about 20 square miles. The average elevation is about 3,500 feet.

Basis of Service

The Indian Creek Watermaster Service Area was created on February 19, 1951. It includes, with certain exceptions, the water rights set forth in Decree No. 4185, entered December 19, 1950, by the Superior Court of Plumas County, and the rights under Permit 7665 issued in approval of Application 12642 after entry of the decree. The statutory proceeding leading to the decree was entitled, "In the Matter of the Determination of the Rights of the Various Claimants to the Water of Indian Creek Stream System in Plumas County, California."

The service area has been amended twice. Watermaster service has been provided during each irrigation season since the service area was created, and annual reports show the work accomplished. There are 49 water right holders in the service area, with allotments totaling 96.715 cfs. Indian Creek decree establishes three priority classes for each major stream within the service area.

Water Supply

The water supply in the Indian Creek Service Area comes from snowmelt, with springs and seepage maintaining some late summer flows. The flow of Wolf Creek is normally sufficient to supply all allotments until June 1. Indian and Lights Creeks normally have sufficient flow to supply all allotments until July 1. After these dates, flows decrease throughout the season and by the end of August, only a small part of the allotments are available.

Method of Distribution

The basic method of irrigation in Indian Valley is wild flooding. Small diversion dams are constructed in the stream channels to divert water into distribution ditches for conveyance to the fields. Small check dams, located throughout the fields in swales, help to spread the water over the ground. There is a limited amount of check and border irrigation in the valley and a few sprinkler systems are in use.

1997 Distribution

Watermaster service began in the Indian Creek Service Area on June 15, 1997 and continued through September 30, 1997 with Charles D. Hand, Water Services Supervisor and Ralph D. Howell, Water Resources Engineering Associate as watermasters.

Wolf Creek

All water rights demands were met the entire season.

Light Creek and Tributaries

Water supply of Lights and Cooks Creeks supplied 100 percent of water demands throughout the season.

Indian Creek

Water supply of Indian Creek supplied 100 percent of water rights demands throughout the season.

MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA

MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA

The Middle Fork Feather River Service Area is in Sierra Valley on the west slope of the Sierra Nevada in eastern Sierra and Plumas Counties.

Major sources of supply for this service area are the Middle Fork Feather River and its tributaries in Sierra Valley. The area is composed of five major stream groups. Starting in the northeast corner of the valley and proceeding clockwise, these are Little Last Chance Creek, Smithneck Creek, Weber Creek and tributaries, West Side Canal, Fletcher Creek and Spring Channels. The Middle Fork Feather River flows generally north for about 15 miles through Sierra Valley. It then flows out of the valley in a westerly direction near Beckwourth. The major place of use is in Sierra Valley which is about 15 miles long and 10 miles wide. The average elevation of the valley floor is 4,900 feet.

Basis of Service

The Middle Fork Feather River Watermaster Service Area was created on March 29, 1940, to include, with the exception of certain tributaries and springs, all water rights set forth in Decree No. 3095, entered in the Middle Fork Feather River statutory adjudication proceeding on January 19, 1940, Superior Court, Plumas County. The decree establishes the number of priority classes for each of the major stream systems within the Middle Fork Feather River service area as follows: Little Last Chance Creek - eight; Smithneck Creek - five; West Side Canal Group - five; Fletcher Creek and Spring Channels - three; Weber Creek and tributaries - six; and Sierra Valley Water Company- one.

The service area has been amended three times. Watermaster service has been provided during each irrigation season since the service area was created, and annual reports have been prepared to show the work accomplished.

There are currently water right owners in the service area.

Water Supply

The major water supply in the Middle Fork Feather River Service Area comes from runoff, with minor flow from springs and supplemental and foreign water.

Natural flows of Little Last Chance Creek are supplemented by reservoir storage provided by Frenchman Dam, which was built by the Department of Water Resources in 1961. Stored water is released as needed under provisions of a water supply contract.

Smithneck Creek flow is sufficient to supply all allotments until about the middle of May. It then decreases until about the first of June when only first and second priority allotments are available for the remainder of the season.

The natural flow of Weber Creek is normally sufficient to supply all allotments until the middle of May. At that time, up to 60 cfs is diverted from the Little Truckee River to supplement the natural flow. This imported water is diverted through the Little Truckee Ditch into Onion Creek and then into Weber Creek, via Cold Stream, for use of shareholders in the Sierra Valley Water Company. This supplemental supply decreases rapidly in July, producing only a small quantity during the latter part of the season.

The West Side Canal streams normally supply all allotments until early June. The flow then gradually declines throughout the remainder of the season. The flow of Fletcher Creek and Spring Channels normally supplies all allotments until July 1. Then it gradually declines for the rest of the season.

Records of the daily mean discharges of the Little Truckee Ditch and the Middle Fork Feather River near Portola are presented in tables 17 and 18, respectively.

Method of Distribution

Wild flooding is used by most ranches to irrigate their fields. Small diversion dams are placed in the stream channels to divert the water into individual distribution systems. Check dams are constructed in the swales to implement flooding once the water reaches the fields.

1997 Distribution

Watermaster service began March 15 in the Middle Fork Feather River Service Area and continued until September 30, with Ronald A. Vanscoy, Water Resources Engineering Associate, as watermaster.

Smithneck Creek

The two-week rotation schedule for water users below Loyalton started in July and continued the entire season.

Weber Creek

By the end of July, the flow in this system decreased to 100 percent of the first-priority and remained at approximately this level for the rest of the season. Importation of water from the Little Truckee River began April 14, 1997 to supplement the natural flow of Weber Creek to satisfy all allotments of the Sierra Valley Water Company shareholders (one priority). A total of 9,722 acre-foot of water was delivered through Little Truckee Ditch during the irrigation season. This diversion was closed on September 30, 1997 to meet fish requirements.

West Side Canal Group

By mid-July, the flow in this system decreased to 100 percent of first priority and nearly 50 percent of second priority and remained at approximately this level the remainder of the season.

Fletcher Creek and Spring Creek

By the end of July the flow in this system decreased to 100 percent of first priority and nearly 50 percent of second priority and remained at approximately this level the remainder of the season.

Little Last Chance Creek

Frenchman Dam and Reservoir began its thirty-fifth season of operation. Delivery and distribution of water was made in accordance with the provisions of the contract and the instructions of the District's Board of Directors. Deliveries for Little Last Chance Water District started May 28 and ended October 23. A total of 12,590 acre-feet of water was delivered. Ralph Howell, Water Resources Engineering Associate, performed the duties of watermaster.

MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA

TABLE 17

1997 Daily Mean Discharge
(In cubic feet per second)

LITTLE TRUCKEE DITCH AT HEAD

DAY	APR.	MAY	JUNE	JULY	AUG.	SEP.
1	0	63	118	78	14	2.7
2	0	73	118	71	13	2.7
3	0	90	118	77	12	3.0
4	9	94	118	79	9.3	3.0
5	24	99	118	67	9.1	2.7
6	24	99	118	70	10	2.4
7	24	103	117	57	7.7	2.4
8	30	109	114	60	5.6	2.1
9	41	109	114	56	5.6	2.1
10	40	109	114	57	2.0	2.1
11	42	109	118	54	3.6	2.1
12	51	109	115	50	4.0	2.1
13	55	118	113	49	4.8	2.1
14	60	118	115	40	5.6	2.1
15	74	118	118	33	4.8	2.1
16	87	118	118	30	4.0	2.1
17	89	118	102	26	3.6	2.1
18	92	118	94	25	3.4	2.1
19	91	118	105	24	3.4	2.1
20	78	115	118	22	6.3	2.1
21	71	106	118	21	5.2	2.1
22	71	102	118	20	6.0	3.6
23	71	102	118	19	4.8	3.3
24	71	108	115	18	5.0	3.3
25	70	98	113	18	5.2	3.3
26	70	90	110	18	5.2	3.3
27	69	85	107	19	4.8	2.7
28	68	107	100	20	3.6	2.4
29	66	118	97	23	2.7	1.8
30	64	119	93	18	2.7	0.5
31	---	119	---	16	2.0	---
MEAN	53.4	105	112	39.8	5.8	2.4
AC-FT	3,177	6,468	6,688	2,449	355	145

MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA

TABLE 18

1997 Daily Mean Discharge
(In cubic feet per second)

MIDDLE FORK FEATHER RIVER NEAR PORTOLA

DAY	APR.	MAY	JUNE	JULY	AUG.	SEP.
1	687	461	111	25	17	11
2	626	461	93	21	18	11
3	621	454	80	20	16	12
4	608	440	75	18	18	12
5	556	408	71	20	17	14
6	492	385	67	21	16	12
7	469	353	67	21	14	12
8	454	335	78	19	14	12
9	492	312	107	19	14	14
10	523	293	133	18	14	14
11	531	287	135	17	14	14
12	476	280	130	16	12	14
13	469	280	128	17	13	14
14	440	282	130	18	13	14
15	418	282	137	16	13	16
16	385	210	178	16	14	16
17	369	145	175	16	14	16
18	360	145	158	15	14	16
19	366	137	140	16	14	19
20	372	133	121	18	13	20
21	405	145	105	18	9	18
22	440	150	90	16	8	18
23	415	153	82	16	13	43
24	425	140	72	16	13	115
25	472	97	65	16	13	126
26	515	109	54	18	12	133
27	515	135	48	20	10	128
28	492	142	41	21	11	126
29	472	140	33	19	12	123
30	472	130	28	17	11	123
31	----	123	----	16	11	----
MEAN	478	243	97.8	18.1	13.4	41.2
AC-FT	28,440	4,950	5,820	1,110	823	2,450

NORTH FORK COTTONWOOD CREEK WATERMASTER SERVICE AREA

NORTH FORK COTTONWOOD CREEK WATERMASTER SERVICE AREA

The North Fork Cottonwood Creek Service Area is in Shasta County near the town of Ono, west of Redding. The source of water for this service area is the North Fork of Cottonwood Creek and its two tributaries, Moon and Jerusalem Creeks. North Fork Cottonwood Creek flows southeasterly where it joins the other two major forks of Cottonwood Creek and then to the Sacramento River east of the town of Cottonwood. The service area consists of sparsely scattered parcels, some in hilly terrain and others in the valleys.

Basis of Service

The water rights of this creek system were determined by court reference and set in Decree No. 5479, Shasta County Superior Court, dated June 9, 1920. The North Fork Cottonwood Creek Watermaster Service Area was created on September 11, 1929, although service had been provided intermittently in accordance with the decree since 1924. All water rights have equal priority.

Water Supply

Snowmelt contributes to the flow in the North Fork Cottonwood Creek system during the early irrigation season, and perennial springs provide the major source of supply during the summer and fall months. The flow is normally sufficient to supply all demands except in dry years, when the available supply may be as low as 20 to 40 percent of the decreed allotments.

Method of Distribution

The practice throughout the area is to irrigate by wild flooding. One water user pumps from the creek, using a sprinkler system to irrigate crops. Pumping is necessary at this diversion point because the irrigated land is considerably higher than the creek channel.

1997 Distribution

Watermaster service for North Fork Cottonwood Creek began June 1 and continued through September 30 with James P. Langley, Water Resources Engineering Associate, as watermaster.

The water was sufficient to meet all the demands for the entire watermaster season.

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

The North Fork Pit River service area lies along the west slopes of the Warner Mountains in northeastern Modoc County and extends south from the Oregon border about 45 miles to just south of Alturas.

The North Fork Pit River flows south from the south rim of Goose Lake Basin to its confluence with the South Fork Pit River west of Alturas. The basins of Goose Lake and the North Fork Pit River may be considered separate, because the lake has not spilled into the river since 1890.

Eight small independent streams flowing west from the west slope of the Warner Mountains constitute the major source of water. Three of these (New Pine, Cottonwood, and Davis Creeks) are tributary to Goose Lake. Five are tributary to the North Fork Pit River. From north to south, they are: Linville, Franklin, Joseph, Thoms, and Parker Creeks.

The place of use in the northern half of the area is a relatively long, narrow, sloping strip of land between the east shore of Goose Lake and the foothills of the Warner Mountains. The places of use in the southern half of the area, which are supplied from the North Fork Pit River and its tributaries, are primarily in the narrow valleys bordering the streams. The elevation of the places of use range from about 4,350 feet just below Alturas to about 5,200 feet at the upper portions on some of the creeks.

Basis of Service

Table 20 outlines the five decrees covering the area and presents data on the establishment of watermaster service and water rights.

Water Supply

The water supply comes mainly from snowmelt for all streams in the North Fork Pit River Service Area except Linville Creek, which, having a small drainage area, is almost entirely spring-fed. After mid-June, the rest of the streams depend on springs, but diminish rapidly until mid-July, after which the flow remains fairly constant. There are several small reservoirs in the area, but they are used essentially for regulatory storage. The mean daily discharge of various tributaries is presented in Tables 21 through 29.

Method of Distribution

Distribution is accomplished by diversion structures in the main channels diverting into ditches that convey the water to its place of use. Wild flooding from small feeder ditches is the common method of application. There is increasing use of sprinkler systems, some from ditches, with supplemental groundwater being added as the surface flow diminishes. Sub-irrigation by the use of large flashboard dams to raise the water level in the channel is practiced along the North Fork Pit River between Parker Creek and Alturas.

1997 Distribution

Watermaster service began on the North Fork Pit River Watermaster Service Area on April 1 with Ron Libby, Water Resources Technician II, as watermaster. Due to a physical problem Ron Libby was unable to continue after April 6. George Fitzmorris, an experienced North Fork Pit Watermaster, served as a substitute until July 1 when Ron Libby returned and completed the season.

Heavy winter rains that caused extensive flooding mainly in January caused creeks to be flowing higher than normal when the season started on April 1, 1997.

New Pine Creek

The flow at the beginning of April was 30 cfs, plenty to satisfy all rights along the creek. During April, May, and most of June the flow continued to run high peaking at more than 90 cfs in April and May. The creek didn't require much regulation until July when flows had dropped. Flows then continued to decrease to the end of the season, with a flow of 3.7 cfs recorded at the end of September.

This creek seems to attract more vandalism than other creeks, with damages to the recorder and occasions when boards were tampered with. The lower California Ditch users were short of water a few times because of upstream users making illegal adjustments.

Cottonwood Creek

The flow was 7.4 cfs on April 1, with no water being diverted for irrigation. The flow remained higher than the demand thru April and May, then gradually dropped off to 0.3 cfs by seasons end.

Davis Creek

The flow in Davis Creek was in abundant supply until mid June. Due to rain and runoff the flow peaked at 63 cfs on April 23 and maintained an average of 45 cfs during May. August and September required vigorous regulation with the flow dropping off to 4.5 cfs on September 23.

Excess gravel continues to be a problem, especially early in the year during higher flows. Boards were removed to flush the channel again this year, and some cleaning of gravel within the town and mill ditches took place. The diversion ditches still remain somewhat clogged with excess gravel, causing extra boards to be used within the channel structure to develop enough head to divert water into the ditches. This problem will need some attention next year.

Linville Creek

Since Linville Creek is spring-fed, there was little variation in the flow during the season. The maximum flow of 4.8 cfs occurred on April 23. The flow slowly decreased to 2.6 cfs by mid-July and continued flowing at 2.6 until the end of September.

Franklin Creek

The flow in Franklin Creek on April 1 was 2.4 cfs, 11 percent of third priority. Rain and runoff brought the creek in excess of 20 cfs before the end of April. Peak flow of 23.3 cfs occurred on April 23. Flow continued to drop through the summer to 2.2 cfs by seasons end on September 30.

Joseph Creek

The flow in Joseph Creek was adequate to meet all of first priority and some second priority until early July when all second priority users were cut off. Stored water from Halls Meadow Reservoir was added to Joseph Creek via Couch Creek. This added flow continued until early September when Halls Meadow release was cut off. Joseph Creek dropped to 1.3 cfs or 28 percent of first priority by September 24.

Thoms Creek

There was adequate water to meet all needs the watermaster season.

Parker Creek

The flow was sufficient to fill all priorities until the end of July when the water users needed water after the cutting of hay. They had to rotate water to be able to get enough to cover fields. Fish and Wildlife Service discontinued releases to Dorris Reservoir from Parker Creek on April 21.

Shields Creek

Shields Creek had adequate water this year with nearly 100 percent of second priority thru July. Flow then dropped off to 3.7 cfs (54 percent of second priority) at the end of the season.

North Fork Pit River

Low flows were experienced most of this years irrigation season. Understanding and cooperation from all of the water users resulted in no regulation required by the watermaster.

Pine Creek Near Alturas

The flow in Pine Creek was 22 cfs (110 percent of first priority) and continued to exceed first priority until mid-July when more regulation was required until the end of the season. The stream peaked on May 15 at 70 cfs and reached a low of 11.0 cfs (54 percent of first priority) on September 19.

TABLE 20

DECREES AND RELATED DATA - NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

Stream	Modoc County Superior Court Decree			Service Area Created	Number of Decreed Water Rights	Total cfs	Remarks
	No.	Date	Type <u>a/</u>				
New Pine	2821	6-14-32	CR	6-22-32	21	22.19	Four priorities.
Cottonwood	2344	5-03-40	CR	12-13-40	5	15.35	When water for Diversion No. 3 is insufficient to reach the area of use, it is diverted at Diversion No. 4.
Davis	2782	6-30-32	CR	7-13-32	19	68.75	Four priorities, 4-1 to 9-30. Some rights vary according to flow available. Most first & second priorities are year-round. One second priority right is for 0.40 cfs export for Roberts Creek.
					<u>2b/</u>		Appropriative Permit 9825 allows diversion from North Fork Davis Creek and License 10549 to divert from Davis Creek, both for the period from 10-1 to 5-1.
Franklin	3118	9-08-33	CR	9-14-33	3	11.66	Four priorities. The first priority and all second priority rights are year round except one which is equal to the sum of all the others (1.46 csf) and is for the period 9-15 to 3-31 annually. Third and Fourth priorities are for 4-1 to 9-30 each year.
North Fork	4074	12-14-39	S	12-18-39	10	52.08	Five priorities, 4-1 to 9-30. Pit River Dorris Reservoir water diverted through Parker Creek ditch on Parker Creek. Fourth and fifth priorities are special class.
Linville	4074	12-14-39	S	12-18-39	3	8.30	Two priorities.
Joseph	4074	12-14-39	S	12-18-39	6	11.98	Four priorities, 4-1 to 9-30. Diversions on south side of stream, with the exception of No. 26, are on net consumptive use basis.
Parker	4074	12-14-39	S	12-18-39	9	17.87	Four priorities, 4-1 to 9-30. Diversion on Dorris Reservoir shown on North Fork Pit River schedule is made at No. 122, Parker Creek Ditch.
Shields	4074	12-14-39	S	12-18-39	7	7.70	Four priorities, 4-1 to 9-30.
Thoms	4074	12-14-39	S	12-18-39	9	6.44	Three priorities, 4-1 to 9-30.
						9.40	5.0 cfs export to Cedar Creek; and 4.40 cfs export to Stony Canyon.
Gleason	4074	12-14-39	S	12-18-39	4	4.55	Five priorities.

a/ S-Statutory, CR-Court Reference.b/ Appropriative rights, junior to the decreed rights.

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 21

1997 Daily Mean Discharge
(In cubic feet per second)

NEW PINE CREEK ABOVE ALL DIVERSIONS

DAY	APR.	MAY	JUNE	JULY	AUG.	SEP.
1	NR	47.2	47.2	14.9	8.5	4.7
2	NR	40.3	41.3	14.5	8.3	4.7
3	NR	38.4	39.3	13.7	8.3	4.7
4	NR	38.4	40.3	13.3	8.0	4.5
5	NR	40.3	38.4	12.9	8.0	4.5
6	NR	48.6	35.4	12.5	8.0	4.5
7	NR	52.8	33.5	12.1	7.7	4.2
8	NR	52.8	30.3	11.8	7.5	4.2
9	NR	58.9	30.3	11.8	7.5	4.2
10	NR	70.3	30.3	----	7.5	4.2
11	NR	90.0	34.5	11.0	7.2	4.2
12	NR	92.0	34.5	11.0	7.2	4.2
13	NR	92.0	33.5	10.7	7.0	4.2
14	NR	86.0	30.3	10.7	7.0	5.2
15	26.0	72.2	29.2	10.7	7.2	5.2
16	29.2	66.5	28.2	10.4	7.0	4.5
17	32.4	68.4	26.0	10.4	7.0	4.5
18	39.3	60.8	23.9	10.4	6.7	4.5
19	68.4	50.0	22.8	10.1	5.9	4.2
20	86.0	47.2	21.5	9.97	6.7	4.5
21	92.0	43.0	20.1	9.6	5.9	3.9
22	86.0	42.2	18.8	9.6	5.7	3.9
23	86.0	38.4	18.1	9.3	5.7	3.9
24	84.0	52.8	16.8	9.3	5.7	3.7
25	27.2	48.6	16.1	9.0	5.7	3.7
26	60.8	48.6	15.7	8.8	5.5	3.7
27	66.5	47.2	15.3	8.8	5.5	3.7
28	68.4	47.2	14.9	8.5	5.5	3.7
29	54.2	47.2	14.9	9.3	5.5	3.7
30	54.2	47.2	15.3	8.8	5.2	3.7
31	----	47.2	----	8.5	4.7	----
MEAN	NR	55.6	27.2	10.8	6.9	4.2
AC-FT	NR	3,417	1,620	662	423	252

NR = No Record

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 22

1997 Daily Mean Discharge
(In cubic feet per second)

COTTONWOOD CREEK ABOVE ALL DIVERSIONS

DAY	APR.	MAY	JUNE	JULY	AUG.	SEP.
1	7.4	18.5	6.8	2.6	0.9	0.3
2	7.4	18.2	6.5	2.2	0.8	0.3
3	7.4	17.8	6.5	1.8	0.8	0.3
4	7.4	18.0	7.0	1.8	0.7	0.3
5	7.2	18.5	6.5	1.5	0.7	0.3
6	7.2	15.5	6.1	1.5	0.6	0.3
7	7.0	12.6	5.2	1.3	0.6	0.3
8	7.0	12.6	4.9	1.3	0.6	0.3
9	6.8	12.8	4.9	1.2	0.5	0.3
10	6.5	13.5	4.0	1.2	0.5	0.3
11	6.5	14.4	5.2	1.2	0.5	0.3
12	6.3	15.8	6.1	1.3	0.5	0.3
13	6.1	18.2	5.8	1.2	0.5	0.3
14	5.8	20.5	5.2	1.1	0.5	0.4
15	7.2	20.3	4.9	1.1	0.4	0.5
16	8.4	19.2	4.2	1.1	0.4	0.5
17	9.6	18.0	4.2	1.1	0.4	0.5
18	10.5	17.3	4.5	1.1	0.4	0.5
19	17.5	16.3	4.5	1.0	0.4	0.5
20	21.4	15.6	4.2	1.0	0.5	0.5
21	22.6	14.9	4.0	0.9	0.5	0.5
22	19.8	13.8	3.6	0.9	0.5	0.4
23	17.0	13.3	3.4	0.9	0.5	0.4
24	11.9	12.4	3.2	0.9	0.5	0.4
25	15.8	10.0	3.2	0.9	0.4	0.3
26	19.8	9.3	2.9	0.9	0.4	0.3
27	19.6	9.1	2.9	0.9	0.4	0.3
28	19.6	8.6	2.6	0.9	0.4	0.3
29	18.7	8.1	2.6	1.1	0.4	0.3
30	18.5	6.3	2.6	1.0	0.4	0.3
31	----	6.5	----	0.9	0.4	----
MEAN	11.8	14.4	4.6	1.2	0.5	0.4
AC-FT	702	885	274	75.0	32.0	21.0

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 23

1997 Daily Mean Discharge
(In cubic feet per second)

DAVIS CREEK BELOW DIVERSIONS NO. 1, 3, AND 21

DAY	APR.	MAY	JUNE	JULY	AUG.	SEP.
1	NR	45.0	27.4	9.3	6.4	5.0
2	NR	41.5	26.4	8.9	6.4	5.0
3	NR	40.0	25.9	8.7	6.4	5.3
4	15.9	38.0	25.4	8.7	6.4	5.1
5	15.9	38.0	24.9	8.4	6.2	5.0
6	15.6	39.0	24.5	8.4	6.2	4.9
7	15.6	40.0	24.0	8.4	6.2	4.8
8	15.9	41.0	23.6	8.7	5.7	4.8
9	15.6	42.0	24.9	8.4	5.4	4.9
10	14.6	42.5	24.9	8.4	5.4	4.9
11	13.9	43.0	24.9	8.2	5.6	5.0
12	13.2	48.0	24.9	8.0	5.4	5.0
13	13.2	52.2	24.0	7.8	5.3	4.9
14	13.2	57.0	21.4	7.6	5.1	5.3
15	13.2	57.0	20.5	7.4	5.1	5.7
16	13.9	55.8	20.5	7.2	5.0	5.1
17	14.2	57.0	20.5	7.2	5.0	5.3
18	17.0	57.0	18.6	7.2	4.9	5.4
19	23.6	57.0	18.2	7.0	4.9	5.0
20	37.5	55.8	17.4	6.8	5.3	4.9
21	49.2	53.4	16.6	6.6	5.1	4.8
22	55.8	51.0	14.6	6.6	5.1	4.6
23	63.0	49.8	13.9	6.4	5.6	4.5
24	60.0	46.8	12.3	6.6	5.7	4.5
25	54.6	42.5	12.0	6.6	5.4	4.5
26	55.2	40.0	10.8	6.6	5.3	4.6
27	57.0	38.5	9.8	6.4	5.3	4.6
28	55.8	37.5	9.5	6.6	5.1	4.6
29	52.2	29.5	9.8	7.0	5.1	4.6
30	46.2	28.5	10.2	6.8	5.1	4.6
31	----	28.0	----	6.6	5.1	----
MEAN	NR	44.9	19.4	7.5	5.5	4.9
AC-FT	NR	2,762	1,155	463	338	292

NR = No Record

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 24

1997 Daily Mean Discharge
(In cubic feet per second)

LINVILLE CREEK ABOVE ALL DIVERSIONS

DAY	APR.	MAY	JUNE	JULY	AUG.	SEP.
1	NR	4.2	3.3	2.7	2.6	2.6
2	NR	4.0	3.3	2.7	2.6	2.6
3	NR	3.9	3.3	2.7	2.6	2.6
4	NR	3.9	3.4	2.8	2.6	2.6
5	NR	3.9	3.4	2.8	2.6	2.6
6	NR	4.0	3.3	2.8	2.6	2.6
7	NR	4.0	3.2	2.8	2.6	2.6
8	NR	4.0	3.2	2.8	2.6	2.6
9	NR	4.0	3.2	2.8	2.6	2.6
10	NR	4.0	3.2	2.8	2.6	2.6
11	NR	3.9	3.2	2.8	2.6	2.6
12	NR	4.0	3.2	2.8	2.6	2.6
13	NR	4.0	3.2	2.8	2.6	2.6
14	NR	3.9	3.2	2.5	2.6	2.6
15	NR	3.8	3.2	2.8	2.6	2.6
16	3.1	3.8	3.1	2.8	2.6	2.6
17	3.1	3.8	3.1	2.7	2.6	2.6
18	3.2	3.7	3.1	2.6	2.6	2.6
19	3.6	3.7	3.1	2.6	2.6	2.6
20	4.2	3.6	3.1	2.6	2.6	2.6
21	4.4	3.6	3.1	2.6	2.6	2.6
22	4.7	3.6	3.1	2.6	2.6	2.6
23	4.8	3.8	3.1	2.6	2.6	2.6
24	4.7	3.6	3.1	2.6	2.6	2.6
25	4.7	3.6	2.8	2.6	2.6	2.6
26	4.6	3.4	2.7	2.6	2.6	2.6
27	4.6	3.4	2.7	2.6	2.6	2.6
28	4.4	3.4	2.7	2.6	2.6	2.6
29	4.3	3.3	2.7	2.6	2.6	2.6
30	4.3	3.3	2.7	2.6	2.6	2.6
31	----	3.3	----	2.6	2.6	----
MEAN	NR	3.8	3.1	2.7	2.6	2.6
AC-FT	NR	231	184	166	160	155

NR= No Record

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 25

1997 Daily Mean Discharge
(In cubic feet per second)

FRANKLIN CREEK ABOVE ALL DIVERSIONS

DAY	APR.	MAY	JUNE	JULY	AUG.	SEP.
1	NR	17.3	5.4	4.2	2.9	2.7
2	NR	16.9	5.2	4.2	2.9	2.7
3	NR	16.2	6.1	4.0	2.9	2.7
4	NR	15.8	7.2	4.0	2.9	2.7
5	NR	15.8	6.4	3.9	2.9	2.7
6	NR	15.5	5.9	3.7	2.9	2.7
7	NR	15.5	5.7	3.5	2.9	2.7
8	NR	15.2	5.5	2.9	2.8	2.7
9	NR	14.8	6.1	2.8	2.8	2.4
10	NR	14.1	5.7	2.9	2.9	2.4
11	NR	13.8	6.1	2.8	2.9	2.4
12	NR	13.4	6.1	2.8	2.9	2.7
13	NR	13.1	5.7	2.8	2.9	2.4
14	NR	11.6	5.4	2.7	2.8	2.9
15	NR	11.0	5.0	2.7	2.8	3.3
16	6.4	10.2	4.8	2.7	2.8	2.9
17	7.2	9.9	4.7	2.8	2.8	3.1
18	8.6	8.6	4.0	3.1	2.9	3.1
19	11.0	7.9	3.9	3.3	2.8	2.8
20	15.8	7.7	3.9	3.1	2.9	2.7
21	19.8	7.2	3.6	3.1	2.9	2.7
22	22.5	7.0	3.6	3.1	2.8	2.4
23	23.3	7.9	3.5	3.1	2.8	2.4
24	21.7	7.5	3.4	3.1	2.9	2.2
25	20.1	6.8	3.4	3.1	2.9	2.2
26	19.8	6.1	3.4	3.1	2.9	2.2
27	19.4	6.1	3.4	3.1	2.9	2.2
28	20.1	5.9	3.6	3.1	2.9	2.2
29	19.4	6.1	3.6	3.5	2.8	2.2
30	18.3	5.5	4.0	3.3	2.8	2.2
31	---	5.4	---	3.1	2.7	---
MEAN	NR	10.8	4.8	3.2	2.9	2.6
AC-FT	NR	666	286	198	176	154

NR = No Record

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 26

1997 Daily Mean Discharge
(In cubic feet per second)

JOSEPH CREEK BELOW COUCH CREEK

DAY	APR.	MAY	JUNE	JULY	AUG.	SEP.
1	20.2	35.0	12.1	5.7	3.6	4.3
2	20.2	26.5	11.5	4.9	3.4	4.3
3	19.0	25.6	11.5	4.5	3.4	4.3
4	17.0	24.7	12.6	4.5	5.0	4.0
5	16.4	23.3	10.9	4.0	5.0	4.0
6	15.4	22.4	10.2	3.8	5.4	3.8
7	14.4	22.4	9.9	3.6	5.4	3.6
8	15.4	21.9	9.9	3.6	5.4	3.6
9	16.7	21.9	11.5	4.9	5.4	3.4
10	16.4	23.3	10.4	4.7	5.2	3.4
11	13.8	24.7	9.9	5.8	5.2	3.4
12	12.4	27.5	9.9	5.8	5.2	2.8
13	13.2	27.5	10.4	5.6	5.1	2.2
14	12.6	25.6	9.9	5.5	5.1	2.6
15	12.4	25.6	9.4	5.4	5.1	2.6
16	12.4	25.6	8.6	5.2	5.1	2.4
17	12.6	25.6	6.9	5.0	5.1	3.0
18	15.4	24.2	6.5	4.9	5.1	3.0
19	23.3	21.9	5.7	4.5	5.1	2.1
20	39.5	21.0	4.9	4.5	5.1	1.7
21	50.1	19.8	4.9	4.5	4.9	1.7
22	48.6	17.8	4.9	4.5	4.9	1.6
23	50.1	20.6	5.1	4.6	4.9	1.4
24	45.6	18.6	5.1	4.5	4.7	1.3
25	40.4	17.8	5.1	4.5	4.7	1.3
26	38.0	15.7	5.5	4.5	4.5	1.4
27	37.4	14.4	5.1	4.5	4.5	1.5
28	38.6	14.1	4.9	4.6	4.5	1.4
29	37.4	14.4	5.1	5.1	4.3	1.4
30	36.5	13.8	5.7	4.0	4.0	1.5
31	----	12.4		3.8	4.0	
MEAN	25.4	21.8	8.1	4.7	4.8	2.6
AC-FT	1,510	1,340	484	289	294	157

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 27

1997 Daily Mean Discharge
(In cubic feet per second)

SHIELDS CREEK

DAY	APR.	MAY	JUNE	JULY	AUG.	SEP.
1	NR	NR	NR	6.2	5.0	4.0
2	NR	NR	NR	6.2	5.0	4.0
3	NR	NR	NR	6.2	5.0	4.0
4	NR	NR	NR	6.2	5.0	4.0
5	NR	NR	NR	5.6	4.8	4.0
6	NR	NR	NR	5.6	4.8	4.0
7	NR	NR	NR	5.1	4.8	4.0
8	NR	NR	NR	5.1	4.8	4.0
9	NR	NR	NR	5.1	4.6	3.9
10	NR	NR	NR	5.1	4.6	3.9
11	NR	NR	NR	5.1	4.6	3.8
12	NR	NR	NR	5.1	4.6	3.8
13	NR	NR	NR	5.0	4.6	3.8
14	NR	NR	NR	5.0	4.6	3.8
15	NR	NR	NR	5.0	4.6	3.8
16	NR	NR	NR	5.0	4.6	3.8
17	NR	NR	NR	5.1	4.3	3.8
18	NR	NR	NR	6.2	4.3	3.8
19	NR	NR	NR	6.2	4.3	3.7
20	NR	NR	NR	6.2	4.3	3.7
21	NR	NR	NR	5.6	4.3	3.7
22	NR	NR	NR	5.1	4.3	3.7
23	NR	NR	NR	5.0	4.3	3.7
24	NR	NR	NR	5.0	4.3	3.7
25	NR	NR	NR	6.2	4.3	3.7
26	NR	NR	NR	5.6	4.3	3.7
27	NR	NR	NR	5.1	4.3	3.7
28	NR	NR	NR	5.1	4.0	3.7
29	NR	NR	NR	5.1	4.0	3.7
30	NR	NR	NR	5.1	4.0	3.7
31	----	NR	----	5.1	4.0	----
MEAN	NR	NR	NR	5.4	4.5	3.8
AC-FT	NR	NR	NR	335	276	227

NR = No Record

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 28

1997 Daily Mean Discharge
(In cubic feet per second)

PINE CREEK NEAR ALTURAS

DAY	APR.	MAY	JUNE	JULY	AUG.	SEP.
1	22.4	45.0	35.0	28.5	16.4	12.5
2	22.4	43.0	37.4	26.8	16.4	12.5
3	21.0	43.0	39.0	26.2	15.9	12.5
4	19.8	43.0	43.0	25.7	15.4	12.5
5	19.8	42.2	40.6	25.1	15.4	12.0
6	19.8	42.2	41.4	25.1	15.4	12.0
7	19.8	41.4	43.0	24.5	15.4	12.0
8	21.0	40.6	41.4	23.4	15.0	11.5
9	21.4	40.6	39.8	22.4	15.4	11.5
10	21.0	45.0	37.4	21.9	15.4	11.5
11	21.0	48.9	37.4	21.9	14.5	11.5
12	19.8	53.7	39.0	21.4	14.5	11.5
13	21.0	63.2	39.0	21.0	14.5	11.5
14	21.0	67.1	39.0	20.4	14.0	12.5
15	21.0	70.0	38.2	19.8	14.0	12.0
16	21.4	67.1	37.4	19.1	14.0	11.5
17	21.9	67.1	36.6	19.1	14.0	12.0
18	22.4	67.1	36.6	18.5	14.0	11.5
19	25.7	67.1	35.8	17.9	14.0	11.0
20	28.0	65.1	35.8	17.4	14.0	11.0
21	33.8	62.2	35.0	16.9	14.0	11.0
22	34.4	58.4	34.4	16.9	13.5	12.0
23	41.4	59.4	33.8	16.9	14.0	13.0
24	40.6	56.6	32.6	16.9	14.0	12.5
25	45.0	47.9	32.0	16.9	14.5	12.5
26	49.9	43.0	31.5	16.9	14.5	12.5
27	50.8	41.4	30.3	16.4	14.5	12.5
28	48.9	38.2	29.7	17.4	14.0	11.5
29	46.9	36.6	29.1	16.9	13.5	11.5
30	46.9	35.8	29.1	16.9	13.0	11.5
31		35.0		16.4	13.0	
MEAN	29.0	50.9	36.3	20.4	14.5	11.9
AC-FT	1,726	3,128	2,163	1,253	893	708

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 29

1997 Daily Mean Discharge
(In cubic feet per second)

NORTH FORK PIT RIVER AT ALTURAS

DAY	APR.	MAY	JUNE	JULY	AUG.	SEP.
1	152	219	39	4.4	2.8	0.4
2	141	196	47	3.8	0.7	0.3
3	137	171	39	2.8	0.8	0.3
4	131	158	66	1.5	3.1	0.3
5	122	139	87	4.2	4.3	0.3
6	118	148	69	3.3	3.4	0.3
7	114	142	52	0.9	1.5	0.3
8	114	125	43	1.0	1.4	0.3
9	119	127	49	1.1	1.4	0.3
10	109	98	74	0.7	1.2	0.3
11	103	102	101	0.7	0.6	0.3
12	93	83	110	0.6	0.6	0.3
13	90	83	110	0.4	0.6	0.3
14	105	91	82	0.4	0.6	0.3
15	99	85	61	0.4	0.6	0.3
16	98	102	49	0.6	0.5	0.3
17	97	86	36	0.7	0.5	0.3
18	114	60	31	1.0	0.6	0.3
19	157	61	23	1.1	0.5	0.2
20	198	53	13	1.1	0.6	0.2
21	344	51	7.9	1.0	0.6	0.2
22	322	53	8.3	0.9	0.6	0.2
23	405	77	14	0.8	0.6	0.2
24	331	128	8.4	1.0	0.6	0.2
25	282	120	NR	1.1	0.6	0.2
26	249	716.5	0.9	0.5	0.2	NR
27	237	485.6	0.8	0.5	0.2	NR
28	237	18	3.3	0.7	0.5	0.2
29	252	50	2.8	3.0	0.5	0.2
30	235	52	2.7	4.4	0.5	0.2
31	----	26	----	4.1	0.4	----
MEAN	177	97.5	NR	1.6	1.0	0.3
AC-FT	10,520	5,996	NR	98	64	16

NR = No Record

SCOTT RIVER WATERMASTER SERVICE AREA

SCOTT RIVER WATERMASTER SERVICE AREA

The Scott River Service Area is in western Siskiyou County and consists of five tributaries of the Scott River: French Creek, Shackleford Creek, Sniktaw Creek, Oro Fino Creek, and Wildcat Creek. Before 1980, French Creek and Shackleford Creek were separate service areas. Wildcat Creek came into service in 1981, Oro Fino in 1984, and the five tributaries to the Scott River were combined to form the Scott River Watermaster Service Area.

Scott River Service Area 1997 Distribution

Watermaster service began in the Scott River Watermaster Service Area on April 1 and ended on September 30 with Keithal B. Dick, Water Resources Technician II, as watermaster.

French Creek

The French Creek Service Area is in Scott Valley, western Siskiyou County, near the town of Etna. The major sources of water supply are French, Miners, and North Fork French Creeks. French Creek flows northeast through the center of the service area. Miners Creek begins east of the headwaters of French Creek and flows in a northerly direction, joining French Creek about three miles above its confluence with Scott River. North Fork French Creek begins north of the headwaters of French Creek and flows easterly, joining French Creek 1 mile upstream from the confluence with Miners Creek.

The service area encompasses the agricultural area within the French Creek Basin and some additional lands along the west side of the Scott River near the town of Etna. It is about 0.5 mile wide and 5 miles long, with the main axis and drainage running from south to north. Elevations of the agricultural area range from about 3,200 feet at the south to about 2,800 feet at the confluence of French Creek and Scott River.

Basis of Service. The rights of this creek system were determined by court reference and set forth in Decree No. 14478, Siskiyou County Superior Court, dated July 1, 1958.

The French Creek Watermaster Service Area was created on November 19, 1968, and service started on July 1, 1969.

Water is distributed according to three schedules: North Fork French Creek, with three priorities; Miners Creek with three; and French Creek, Horse Range Creek, Paynes Lake Creek, and Duck Lake system, with seven. These schedules are independent of each other with two exceptions: (1) Miners Creek users have the option of diverting from French Creek when water is not available from Miners Creek, and (2) maximum allowable flows are specified at given points, regardless of the source of the water.

One peculiarity of this decree is that it included two water rights that have a specified amount, which are subject to the exclusive control of the other owners of the ditch.

Water Supply

The water supply comes from snowmelt runoff, springs and seepage, and occasional summer thundershowers.

The watershed of French Creek contains about 32 square miles of heavily forested, steep mountainous terrain of the easterly slopes of the Salmon Mountains. It varies in elevation from about 7,200 feet along its west rim to about 3,200 feet at the slopes bordering French Creek Valley. Snowmelt runoff is normally sufficient to supply all demands until about the middle of July. The daily mean discharge of French Creek above North Fork French Creek is presented in Table 30.

Method of Distribution

Irrigation is mainly by wild flooding of permanent pasture. Water is distributed by ditches and laterals to the place of use.

The season started on French Creek with all users receiving full rights. Streamflows continued above 100 percent of all priorities until September 1. By September 15, distribution was down to fourth priority users only and continued at that rate until September 30, the end of the irrigation season.

No releases were started from Smith Lake to the North Fork Ditch users.

Shackleford Creek

The Shackleford Creek Service Area is in western Siskiyou County near the town of Fort Jones in Scott Valley. The major sources of water for this service area are Shackleford Creek, which flows through the central part of Quartz Valley, and its tributary, Mill Creek, which rises east of the headwaters of Shackleford Creek. Evans Creek, a small tributary to Mill Creek, enters from the south.

The service area encompasses the Quartz Valley region of Scott Valley and includes the agricultural area within the Shackleford Creek Basin. It is about 2 miles wide by 6 miles long, with the main axis and drainage running from south to north. Elevations on the agricultural area range from about 3,100 feet at the south to about 2,650 feet at the confluence of Shackleford Creek and Scott River.

Basis of Service

The Shackleford Creek Watermaster Service Area was created on November 6, 1950. Water is distributed under the provisions of a statutory adjudication which resulted in Decree No. 13775, Siskiyou County Superior Court, dated April 3, 1950.

The allotments are defined in four schedules. The upper and lower Shackleford Creek groups each have seven priority classes. The upper Mill Creek group and lower Mill Creek group each have three priority classes.

The decree also includes two storage rights upstream of all diversions. This stored water is released late in the irrigation season to Shackleford Creek for use by water right holders.

Water Supply

The water supply for Shackleford Creek comes from snowmelt runoff, springs and seepage, and supplemental stored water released from Campbell Lake, near the headwaters of Shackleford Creek.

The watershed of the Shackleford Creek stream system contains about 31 square miles, located in the heavily forested, steep mountainous terrain of the northeasterly slopes of the Salmon Mountains. It varies in elevation from about 7,000 feet along its west rim to about 3,000 feet at the foot of the slopes bordering Quartz Valley. Snowmelt runoff is normally sufficient to supply all demands until the middle of July. The supply then usually decreases until the first part of August when water is released from Cliff and Campbell Lakes to maintain sufficient flow in the Shackleford Ditch.

Method of Distribution

Irrigation is accomplished primarily by wild flooding of permanent pasture and alfalfa fields. Water is distributed by ditches and laterals to the places of use. Shackleford Ditch, the largest of these ditches, has a length of about 6 miles and a capacity of about 12 cfs.

Shackleford Creek 1997 Distribution

The season started on Shackleford Creek with all users receiving full rights and continued until August 20.

Releases were started from Campbell Lake to the Shackleford Ditch on September 1. One hundred percent of all third priority allotments was available through September 30.

Sniktaw Creek

The Sniktaw Creek service area is in western Siskiyou County, 7 miles west of the town of Fort Jones in Scott Valley. It encompasses an agricultural area about 3 miles long and 1 mile wide, running from south to north. Elevations in the Sniktaw watershed range from 6,700 feet in the southwest to about 2,650 feet at the confluence of Sniktaw Creek and Scott River.

Basis of Service

The Sniktaw Creek Service Area was added to the Scott River watermaster service area on April 1, 1981. Water is distributed under the provisions of a statutory adjudication which resulted in Decree No. 30662, Siskiyou County Superior Court, dated January 16, 1980.

The allotments are defined in the Scott River Decree, Schedule B 38, which has three priority allotments.

Water Supply

The water supply for Sniktaw Creek comes from snowmelt, springs, and seepage. Water from Shackleford Creek (Divisions 3, 17, 19, 20, and 21) supplements available water in Sniktaw Creek.

Return water from Heide's Shackleford Creek Ditch, Diversion 3, commingles with the natural flow of Sniktaw Creek. After leaving the Heide property and entering Sniktaw Creek, it is allotted as set forth in Schedule B 38 (Sniktaw Creek) from Divisions 665 to 679. Heide may use tailwater from Shackleford Creek Ditch, Diversion 3, for irrigation of 27 acres under License 10875 issued on Application 22882 for use on former Indian lands. The right may be exercised only at times that Heide is receiving water from Shackleford Creek Ditch, Diversion 3, or at times that all Sniktaw Creek allotments are being filled.

Method of Distribution

Irrigation is done mainly by wild flooding of permanent pasture. Water is distributed by ditches and laterals to the place of use.

Sniktaw Creek 1997 Distribution

All priorities were filled until August 20; by September 5, the water supply had receded to 80 percent of second priority. The Heide Ditch from Shackleford Creek was not used in 1997.

Wildcat Creek

The Wildcat Creek Service Area is in western Siskiyou County near the town of Callahan. The major sources of water are Wildcat Creek, which flows through the service area, and foreign water imported from Sugar Creek, Jackson Creek, Grizzly Creek, and Camp Gulch.

Basis of Service

The Wildcat Creek Watermaster Area was started May 1, 1980. Water is distributed under a statutory adjudication that resulted in Decree No. 30662, Siskiyou County Superior Court, dated January 16, 1980. The allotments are defined in the Scott River Decree, Schedule B 10.

Method of Distribution

Irrigation is done mainly by wild flooding of permanent pasture. Water is distributed by ditches and laterals to the place of use.

Wildcat Creek 1997 Distribution

The water supply was above normal. Import water from Sugar Creek and Jackson Creek was not used in 1997 due to a washed out ditch, runoff from the Hall Ranch helped supply the Thamer Ranch. These two ranches both were leased and irrigated by one operator and required no regulation.

Oro Fino Creek

The Oro Fino Creek Service Area is in southwestern Siskiyou County near the town of Greenview. It encompasses an agricultural area about 5 miles long and 0.5 mile wide, running from south to north. Elevations along Oro Fino Creek range from 2,900 feet near the headwaters to 2,700 feet at the confluence of Oro Fino Creek and the Scott River.

Basis of Service

The Oro Fino Creek service area was added to the Scott River Watermaster Service Area on July 1, 1984. Water is distributed under the provision of the statutory adjudication which resulted in Decree 30662, Siskiyou County Superior Court, dated January 16, 1980.

Water Supply

The water supply for Oro Fino Creek above Diversion 606 is derived from Kidder Creek. Springs feed Oro Fino Creek below Diversion 607. Allotments are diverted

from underflow by means of offset wells or sumps at Diversions 606, 606a, 611, and 612. The allotments at Diversions 607, 608, 609, 610, 613, 613a, 614, 615, and 616 may be diverted, at the option of the claimant, from surface flow or from underflow by means of offset wells or sumps or a combination of both with the provision that when surface flow in the creek (at the county road at the O. Lewis property) recedes to 3 cfs, the percentage or amount of the surface flow reaching the point of diversion of each of the following claimants shall be bypassed at the claimant's lower property line: Friden, 51 percent; O. Lewis, 96 percent; and J. Eppler, all flow in excess of 1.31 cfs.

The groundwater table along Oro Fino Creek is recharged mainly by Kidder Creek Diversions 446 and 448 which supply surface water to the Foster and Friden lands. Kidder Creek streamflow for these diversions is mainly snowmelt runoff.

Method of Distribution

Irrigation is done mainly by wild flooding of permanent pasture. Water is distributed by ditches and laterals to the place of use.

The water supply of Oro Fino Creek was above normal. Water supply was helped with imported water from Kidder Creek until August 1. Flows receded to stock water in late September.

SCOTT RIVER WATERMASTER SERVICE AREA

TABLE 30

1997 Daily Mean Discharge
(In cubic feet per second)

FRENCH CREEK ABOVE NORTH FORK FRENCH CREEK

DAY	APR.	MAY	JUNE	JULY	AUG.	SEP.
1	NR	NR	47E	34	14	9.0
2	NR	NR	46E	33	14	8.8
3	NR	NR	46E	28	15	8.8
4	NR	NR	45E	20	15	8.7
5	NR	NR	45*	20	14	8.5
6	NR	NR	42	20	13	8.5
7	NR	NR	42	21	13	8.5
8	NR	NR	43	20	13	8.6
9	NR	NR	43	19	12	8.6
10	NR	NR	42	19	12	8.6
11	NR	NR	42	18	10	8.5
12	NR	NR	41	18	10	8.5
13	NR	NR	46	18	10	8.5
14	NR	NR	45	17	9.9	9.8
15	NR	NR	44	17	9.8	10
16	NR	NR	43	17	9.9	10
17	NR	NR	43	15	9.8	11
18	NR	NR	43	15	9.8	10
19	NR	NR	42	15	9.7	9.8
20	NR	NR	40	14	9.7	9.8
21	NR	NR	41	14	9.7	9.7
22	NR	NR	40	14	9.5	9.8
23	NR	NR	39	20	9.4	9.7
24	NR	NR	39	18	9.3	9.7
25	NR	NR	38	17	9.2	9.9
26	NR	NR	37	16	9.1	9.9
27	NR	NR	37	15	9.3	9.9
28	NR	NR	36	15	9.3	10
29	NR	NR	36	14	9.2	10
30	NR	NR	35	17	9.1	10
31	---	NR	---	15	9.2	---
MEAN	NR	NR	42	18	10.2	9.4
AC-FT	NR	NR	2,475	1,137	630	358

*Started Record
E = Estimated
NR = No Record

SHASTA RIVER WATERMASTER SERVICE AREA

SHASTA RIVER WATERMASTER SERVICE AREA

The Shasta River Service Area is in central Siskiyou County. Willow Creek and Cold Creek, formerly in the Klamath River Watermaster Service Area, were incorporated into the Shasta River watermaster service area in 1983.

The water supply comes from North Fork Sacramento River, Shasta River, and its several tributaries. The upper reaches of the service area are served by two groups of tributaries. One group, comprising Boles, Beaughan, Carrick, and Jackson Creeks, rises on the northwestern slopes of Mount Shasta. The other group, consisting of Dale and Eddy Creeks, and Shasta River west of Interstate 5, rises on the eastern slopes of the Trinity Mountains. All these streams join the mainstem Shasta River above Lake Shastina (Dwinnell Reservoir) near the town of Weed. As the Shasta River flows north from Lake Shastina to its confluence with the Klamath River, north of Yreka, it is joined by three major tributaries. Parks Creek, rising on the eastern slopes of the Trinity Mountains enters from the west near the town of Gazelle. Big Springs Creek, from Big Springs Lake, enters from the east about a mile below Parks Creek. Little Shasta River, rising on the slopes of the mountainous area between Butte Valley and Shasta Valley, enters from the east near the town of Montague.

Shasta Valley is about 30 miles long and 30 miles wide. In the center of the valley are many small, cone-shaped, volcanic hillocks that divide the area into separate parts. Because of these volcanic formations, only about 141,000 acres of the 507,000 acres in the valley are irrigable. The valley floor elevation averages 3,000 feet.

Willow Creek is in Siskiyou County, approximately 10 miles northeast of Montague. It is the major source of water to the service area and rises on the west slope of the 7,800-foot Willow Creek Mountain. It flows northwest through 11 miles of rolling hills to its confluence with the Klamath River. The Willow Creek area is about 8 miles long by 1 mile wide and varies in elevation between 2,600 and 4,000 feet.

Cold Creek is south of Copco Lake, a hydroelectric power reservoir on the Klamath River in the extreme northern part of Siskiyou County. Yreka is 30 miles southwest of the Cold Creek stream system. Elevations within the Cold Creek watershed range from 2,900 feet to 6,500 feet.

Basis of Service

The Shasta River Watermaster Service Area was created on March 1, 1933. The appropriate water rights on this stream system were determined by a statutory adjudication that resulted in Decree No. 7035, Siskiyou County Superior Court, dated December 29, 1932.

The decree lists the water rights of the stream system by the users names. The rights supervised by the watermaster are broken down into eight schedules. Shasta River above its confluence with Big Springs Creek - 43 priorities; Boles Creek - 20 priorities; Beaughan Creek - 5 priorities; Jackson Creek - 7 priorities; Carrick Creek - 13 priorities; Parks Creek - 25 priorities; Shasta River below its confluence with Big Springs Creek and Big Springs Creek and tributaries - 29 priorities; and Little Shasta River - 7 priorities. Additional schedules include Willow Creek, Yreka Creek, and miscellaneous independent springs, gulches, and sloughs, but these are not included in the service area.

Montague Water Conservation District has appropriate rights for storage of Shasta River and Parks Creek water in Lake Shastina. By agreement with the District, five nearby downstream users receive water from storage in lieu of their decreed continuous flow allotments. The watermaster handles the reservoir releases for these users. A peculiarity of the Shasta River decree is that it defines only appropriate rights and excludes a number of riparian users on the Lower Shasta River. Holders of these riparian rights are not regulated by the watermaster.

Water Supply

The water supply for Shasta Valley comes from snowmelt runoff, groundwater and related springs, and occasional summer thundershowers. In several parts of the stream system, the springs are enough to supply most allotments throughout the season. Much of the underground flow comes from the northern slopes of Mount Shasta, rising to 14,162 feet at the south end of Shasta Valley. Although the snowpack on Mount Shasta is usually heavy, there is little surface runoff.

Parks Creek, Upper Shasta River, and Little Shasta River get much of their water from snowmelt runoff, usually enough to supply allotments until the middle of May.

Beaughan Creek, Carrick Creek, Shasta River from Boles Creek to Lake Shastina, Big Springs, and Lower Shasta River have enough runoff from springs to supply many of the allotments throughout the season.

Records of the daily mean discharge at several stream gaging stations in the Shasta River Service Area are in Tables 31 through 34. The daily mean storage in Lake Shastina is in Table 35.

Method of Distribution

Irrigation of permanent pasture and alfalfa lands is mainly by wild flooding. Much of the return water is recaptured and used on lower pasture lands. Sprinkling systems are used for irrigating some alfalfa and grain crops. Water is routed by diversion dams and then carried by ditch or canal to the place of use. The largest and longest canal in the area is the Edson-Foulke Yreka Ditch, which has a capacity of about 60 cfs and a length of about 14 miles. Water is also supplied to ditch systems by pumped diversions, the three largest belonging to two irrigation districts and a private water users' association. Some riparian lands are also served by pump diversions. Many storage reservoirs are privately owned. Water from these reservoirs supplements continuous-flow allotments.

Because of the large rights of Grenada and Big Springs Irrigation Districts and Shasta River Water Users Association, the watermaster's close surveillance is important, particularly in dry years. Control of releases from Montague Water Conservation District's Dwinnell Reservoir (Lake Shastina) is another responsibility of the watermaster. This includes measurement of deliveries of stored water to users just below the dam. Control of releases from Hammond Lake is also a duty of the watermaster.

1997 Distribution

Watermaster service began April 1 in the Shasta River Watermaster Service Area and ended September 30 with Keithal B. Dick, Water Resources Technician II, and Lester L. Lighthall, Water Resources Technician II, as watermasters.

At the start of the season the forecast was for a below average year, but because of frequent rains and mild temperatures an average or slightly above average season was experienced.

Parks Creek

Flows were above normal with all rights being filled until the middle of June. Flows decreased and third priorities were discontinued by the latter part of June. Flows continued to decrease with less than 4.0 cfs by September.

Upper Shasta River

Upper Shasta River, Dale, and Eddy Creeks are on the same order of priorities. The flow was enough to fill all priorities until July 8. Flow decreased to 32 percent of third priorities in August and remained until the end of September. Lower priorities below the Yreka Ditch received return flow and inflow from springs after July 8.

The Hammond Reservoir Irrigation Association, owners of the Hammond Reservoir, was added to the Shasta River Watermaster Service Area in 1989. The 348-acre-foot reservoir has storage licenses 5261 and 6531 for water diverted from the North Fork Sacramento River. The stored water is released to the Shasta River and diverted into diversions 3, 4, 4 west, 5, 6, 7, and 19. The releases are measured at a weir downstream from the reservoir. The reservoir filled and remained full until July 5; releases started August 19. The reservoir was not drained this year. Diversions from North Fork of the Sacramento River were started on April 15 and ended July 15.

Boles Creek and Shasta River to Lake Shastina (Dwinnell Reservoir)

Boles Creek and this portion of Shasta River are operated as one stream under a long-standing oral agreement among the water right holders. The water is distributed on a correlative, equal-priority basis. Water was set to 100 percent of all rights in August. Flows decreased to 90 percent for two weeks in the middle of August, then back to 100 percent the rest of the season.

Beaughan Creek

With regulation of the upper users, all priorities were satisfied for the season. Roseburg Lumber Company used all of its rights to sprinkle its log decks.

Carrick Creek

Carrick Springs supplied water to satisfy all 13 priorities for the season with regulation.

Little Shasta River

There was above-average snowmelt runoff this season on the Little Shasta River. The flows started at 100 percent of all priorities and decreased gradually to 80 percent of fifth priority on July 15. Flows decreased to 40 percent of fifth priority on August 1, and remained that way until the season's end.

Dwinnell Reservoir

Storage in Dwinnell Reservoir on March 1 was 42,600 acre-feet and decreased to 4,490 acre-feet by April 30. On September 30, storage was down to 12,230 acre-feet. By agreement with the Montague Water Conservation District, owner of Dwinnell Reservoir, water users on Shasta River below the reservoir received stored water on demand.

**Deliveries to Natural Flow Water Right Owners
Below Dwinnell Reservoir - 1997**

<u>Name of Water Right Holder</u>	<u>Allotment (in acre-feet)</u>	<u>Amount Delivered from Dwinnell Reservoir (in acre-feet)</u>
Wagner, Richard W.	1,200	1,200
Flying L Ranch	198	198
Hole-in-the-Ground Ranch	596	596
Seldom Seen Ranch	924	924
Hidden Valley Ranch	<u>464</u>	<u>464</u>
	3,382	3,382

Big Springs Lake

Big Springs Irrigation District used its wells, and no water was received from Big Springs Lake. An agreement between E. J. Louie, A. H. Newton, Jr., and Montague Water Conservation District was established during the winter of 1986. They agreed when the flows of Big Springs receded from 17.5 cfs to 10.0 cfs, Montague Water Conservation District would do the following:

- Turn off the Basey pumps until the flow of Big Springs is 17.5 cfs or pay A. H. Newton, Jr. the additional power cost to use his pumps.
- If flows of Big Springs fall below 10.0 cfs, Montague Water Conservation District will shut off the Basey pumps until flows return to above 10.0 cfs.

There was no pumping by the Montague District during the 1997 season. The flow of Big Springs receded to 10 cfs for parts of August and September.

Lower Shasta River

The flows in the Lower Shasta River were enough to supply all priorities until August 14. Grenada Irrigation District was reduced from 40 cfs to 25 cfs for five days then diverted at full capacity for the rest of the season. The season ended with all users at 100 percent of their rights.

Willow Creek (North of Montague)

Basis of Service

Willow Creek has had a long history of litigation. The present basis of service was initiated in 1949 when the Department of Public Works, Division of Water Resources, was asked to referee a civil suit. The matter was not finalized by a decree until 1972. The issues involved were reopened in 1971, and by Decree No. 24482, dated April 28, 1972, the Siskiyou County Superior Court appointed DWR to supervise distribution of water in accordance with an earlier agreement between the users which defined their respective rights. Willow Creek is part of the Shasta River Watermaster Service Area.

There are three water users in the service area. Distribution is fractional until the flow drops to a specified amount below the upper two users. At that time, the flow is rotated between the upper two users.

Water Supply

The main source of water for the Willow Creek stream system is from snowmelt. Runoff from the snowmelt begins late in March or early April and is usually depleted by June. Thereafter, the streamflow decreases rapidly until about July 25. From then until the rainy season begins, the flow remains at a low-flow stage sufficient to provide domestic and stock-watering purposes to the two upper users.

Method of Distribution

Both sprinkler and flood irrigation are used on Willow Creek. The upper water user has the option of using gravity diversions for either flood or sprinkler irrigation. The middle user relies entirely on runoff from the upper user's flood irrigation. The lower user in the area uses both flood and sprinkler irrigation during the early season when the supply is abundant. As the supply dwindles, the remaining water is pumped from a sump to the sprinkler system.

1997 Distribution

Snowmelt lasted until September 6. On September 30, 1997 there was only 0.2 cfs left for distribution.

Cold Creek

Basis of Service

A statutory adjudication of Cold Creek in 1978 ordered DWR to provide watermaster service at Diversions 2, 3, and 4, and at the diversion weir on the Silva-Lennox Ditch. Watermaster service began April 1, 1981.

Water Supply

Flow is from springs and remains fairly constant each season.

Method of Distribution

Both sprinkler and flood irrigation are used in Cold Creek service area.

1997 Distribution

The water supply of the Cold Creek stream system satisfied all requirements until September 1. Only a portion of full entitlements were satisfied thereafter. No regulation was required since the automatic split worked well.

SHASTA RIVER WATERMASTER SERVICE AREA

TABLE 31

1997 Daily Mean Discharge
(In cubic feet per second)

SHASTA RIVER NEAR YREKA^{1/}

DAY	APR.	MAY	JUNE	JULY	AUG.	SEP.
1	212	164	80	139	39	91
2	177	171	77	148	30	92
3	164	162	85	142	26	98
4	155	155	129	135	27	86
5	157	156	170	125	28	58
6	151	146	154	117	28	58
7	137	145	105	126	27	50
8	125	133	91	122	33	42
9	129	112	91	99	37	44
10	126	102	79	70	35	43
11	110	112	101	58	40	64
12	110	107	114	54	37	64
13	117	114	119	52	26	60
14	113	171	117	47	23	75
15	117	146	100	33	20	140
16	109	78	85	29	16	134
17	115	72	81	41	20	110
18	123	71	85	42	24	123
19	141	67	69	57	23	129
20	140	63	67	30	52	116
21	157	58	74	28	109	94
22	152	52	53	44	73	72
23	159	64	56	43	49	74
24	164	71	54	35	53	82
25	159	80	46	34	55	92
26	155	90	43	50	63	103
27	152	86	49	53	88	96
28	144	88	50	37	86	93
29	152	74	52	33	91	100
30	160	63	80	43	91	106
31	----	70	----	38	87	----
MEAN	143	105	85.1	66.1	46.4	86.4
AC-FT	8,510	6,430	5,050	4,110	2,850	5,140

^{1/} USGS gage

**SHASTA RIVER WATERMASTER SERVICE AREA
TABLE 32**

1997 Daily Mean Discharge
(In cubic feet per second)

SHASTA RIVER NEAR EDGEWOOD

DAY	APR.	MAY	JUNE	JULY	AUG.	SEP.
1	NR	NR	NR	43	15	15
2	NR	NR	97	32	15	15
3	NR	NR	NR	22	14	14
4	NR	NR	NR	20	13	13
5	NR	NR	NR	18	12	13
6	NR	NR	NR	16	11	13
7	NR	NR	NR	15	10	13
8	NR	NR	NR	16	9.6	13
9	NR	NR	NR	16	9.1	13
10	NR	NR	NR	16	9.1	13
11	NR	NR	NR	16	9.6	14
12	NR	NR	NR	16	9.6	14
13	NR	NR	NR	16	9.6	16
14	NR	NR	NR	16	9.6	28
15	NR	NR	NR	16	9.6	24
16	NR	NR	NR	16	9.6	23
17	NR	NR	NR	16	10	24
18	NR	NR	NR	16	9.1	21
19	NR	NR	NR	16	9.6	19
20	NR	NR	NR	16	48	19
21	NR	NR	NR	15	19	19
22	NR	NR	NR	14	16	18
23	NR	NR	NR	13	15	16
24	NR	NR	47	12	14	15
25	NR	NR	49	10	14	15
26	NR	NR	NR	10	14	15
27	NR	NR	NR	15	15	15
28	NR	NR	NR	14	16	14
29	NR	NR	NR	14	16	14
30	NR	NR	5.1	14	16	13
31	---	NR	---	15	15	---
MEAN	NR	NR	NR	16.8	136	164
AC-FT	NR	NR	NR	1,032	837	974

NR = No Record

SHASTA RIVER WATERMASTER SERVICE AREA

TABLE 33

1997 Daily Mean Discharge
(In cubic feet per second)

PARKS CREEK ABOVE EDSON-FOULKE YREKA DITCH

NO RECORD BECAUSE OF DAMAGE FROM JANUARY 1997 FLOOD

SHASTA RIVER WATERMASTER SERVICE AREA

TABLE 34

1997 Daily Mean Discharge
(In cubic feet per second)

SHASTA RIVER AT MONTAGUE-GRENADA HIGHWAY BRIDGE

DAY	APR.	MAY	JUNE	JULY	AUG.	SEP.
1	179E	197	94	151	34	124
2	179E	193	94	158	31	124
3	179E	179	97	158	33	117
4	179*	179	137	154	33	107
5	179	172	158	151	34	74
6	172	162	144	151	34	61
7	144	162	134	154	36	51
8	151	134	110	110	38	43
9	137	117	107	77	38	41
10	134	127	137	61	43	38
11	124	127	134	41	40	51
12	134	127	141	41	29	51
13	144	120	127	38	24	55
14	148	252	113	38	23	84
15	154	197	94	31	20	144
16	130	84	117	29	23	127
17	137	103	94	39	31	117
18	144	100	71	36	31	134
19	162	103	51	31	29	151
20	165	103	45	27	110	134
21	186	36	48	31	107	67
22	183	33	38	40	51	71
23	197	64	45	38	48	71
24	190	77	45	36	51	84
25	186	84	45	38	58	110
26	183	90	40	41	84	113
27	179	87	40	40	107	110
28	172	87	45	40	113	110
29	179	97	41	38	117	110
30	197	97	48	38	117	110
31	----	94	----	34	117	----
MEAN	163	122	88	67	54	93
AC-FT	9,717	7,486	5,224	4,145	3,336	5,521

*Started Record
E = Estimated

SHASTA RIVER WATERMASTER SERVICE AREA

1997 Season

TABLE 35

LAKE SHASTINA (DWINNELL RESERVOIR) DAILY MEAN STORAGE IN ACRE-FEET

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.
1	15,140	14,660	17,870	41,300	46,780	46,600	46,600	42,320	36,540	30,240	21,500	14,780
2	15,020	14,660	17,870	45,880	46,600	46,600	46,600	42,150	36,200	30,240	21,220	14,540
3	15,020	14,660	18,000	47,500	46,420	46,600	46,600	42,150	36,030	30,080	20,940	14,300
4	15,020	14,660	18,000	48,400	46,420	46,600	46,420	41,980	36,030	29,920	20,660	14,080
5	14,900	14,660	18,420	48,760	46,420	46,600	46,420	41,810	36,030	29,600	20,380	13,970
6	14,900	14,660	18,560	49,120	46,600	46,600	46,240	41,640	36,030	29,450	20,100	13,750
7	14,900	14,780	18,980	48,940	46,600	46,600	46,060	41,470	35,860	29,300	19,960	13,530
8	14,900	14,780	19,680	48,940	46,600	46,600	45,880	41,130	35,690	29,000	19,680	13,310
9	14,780	14,780	21,920	48,760	46,600	46,600	45,700	40,960	35,520	28,700	19,400	13,090
10	14,780	14,780	24,800	48,580	46,780	46,600	45,340	40,790	35,350	28,400	19,260	12,980
11	14,780	14,780	26,000	48,400	46,780	46,600	45,160	40,620	35,180	27,950	18,700	12,760
12	14,780	14,780	26,750	48,220	46,780	46,600	44,800	40,450	35,010	27,650	18,560	12,540
13	14,780	14,780	27,050	47,860	46,780	46,600	44,620	40,280	34,840	27,350	18,140	12,430
14	14,660	14,780	27,350	47,680	46,780	46,600	44,440	39,940	34,670	27,050	18,000	12,430
15	14,660	14,780	27,500	47,320	46,780	46,600	44,080	39,770	34,330	26,750	17,740	12,320
16	14,660	14,780	27,650	47,140	46,780	46,600	43,900	39,600	34,160	26,300	16,430	12,320
17	14,660	14,780	27,800	46,960	46,780	46,600	43,720	39,430	33,990	26,000	16,220	12,320
18	14,660	15,020	27,950	46,960	46,780	46,600	43,540	39,090	33,650	25,700	16,100	12,320
19	14,540	15,500	28,100	46,780	46,780	46,420	43,180	38,920	33,480	25,400	15,860	12,320
20	14,540	16,460	28,250	46,600	46,780	46,600	43,000	38,750	33,140	25,100	15,740	12,320
21	14,540	16,580	28,250	46,600	46,780	46,600	43,000	38,580	32,970	26,300	16,430	12,320
22	14,540	16,830	28,400	46,780	46,780	46,600	43,180	38,410	32,640	26,150	16,220	12,320
23	14,660	17,090	28,550	46,960	46,780	46,600	43,360	38,070	32,320	25,700	16,100	12,320
24	14,660	17,220	28,550	46,960	46,780	46,600	43,360	37,900	32,000	25,550	15,860	12,320
25	14,660	17,350	28,700	47,140	46,600	46,600	43,360	37,730	31,680	25,100	15,740	12,320
26	14,660	17,480	28,850	47,320	46,600	46,600	43,180	37,580	31,360	24,800	15,620	12,320
27	14,660	17,610	28,850	47,500	46,600	46,600	43,000	37,390	31,040	24,500	15,380	12,320
28	14,660	17,610	29,150	47,500	46,600	46,600	42,840	37,220	30,720	24,200	15,260	12,320
29	14,660	17,740	30,240	47,320	---	46,600	42,660	37,050	30,400	23,900	15,140	12,320
30	14,660	17,740	32,800	47,140	---	46,600	42,490	36,880	30,400	22,200	15,020	12,320
31	14,660	---	36,200	46,960	---	46,600	---	36,710	---	21,920	14,900	---

SURPRISE VALLEY WATERMASTER SERVICE AREA

SURPRISE VALLEY WATERMASTER SERVICE AREA

The Surprise Valley Service Area is in Modoc County, east of the Warner Mountains. Eleven individual stream systems on the eastern slope of the Warner Mountains supply water to the area. These are fed by snowmelt runoff and run in fast, steep courses down the eastern slope of the Warner Mountains to the valley floor where numerous scattered diversion ditches convey water to the irrigated lands.

Basis of Service

The Surprise Valley Watermaster Service Area was created January 10, 1939 and included Mill, Soldier, Pine, Cedar, Deep, Owl, Rader, and Emerson Creeks, each of which had watermaster service. Also, service was started on Eagle Creek at that time. Bidwell Creek was added to the service area on March 16, 1960, and Cottonwood Creek was added in 1977. The 11 stream systems in Surprise Valley are under separate decrees.

See Table 36, for specific data about the decrees and water rights on the creeks.

Water Supply

Almost all the water supply comes from snowmelt, with minor spring-fed flows occurring late in the season. Due to the steep eastern slope of the Warner Mountains, there are no likely storage sites on the service area streams. Because of the lack of such regulatory storage, the available water supply at any specific diversion point may vary considerably within a few hours. Daily temperature changes cause changes in the rate of snowmelt runoff. This situation is worsened by the relatively short, steep drainage area. Summer thundershowers may cause a creek to discharge a flow of mammoth proportions for several hours. These flashes can cause considerable damage from washouts and debris deposition but are of such short duration that little or no beneficial use can be made of the water.

Records of the daily mean discharge at several stream gaging stations within the service area are presented in Tables 37 through 48.

Method of Distribution

Continuous-flow distribution is used on most creeks, but water is rotated among some users in accordance with either decree schedule or by mutual agreement.

Alfalfa and meadow hay, the major crops in the valley, are irrigated by sprinklers and wild flooding, although some lands depend upon subsurface irrigation. A few of these systems work by gravity, but most use pumps with the surface water supplemented by deep wells. Many additional acres have been put into production during the past few years through the use of deep wells. Only surface water supplies are under State Watermaster Service.

To ease distribution of irrigation water, construction of permanent diversion dams, headgates, and measuring devices have been encouraged in recent years. Although these structures do not solve the problems of discharge variation and debris deposition, they help solve water measurement and distribution problems.

1997 Distribution

Watermaster service began in the Surprise Valley Watermaster Service Area on March 19 and continued until September 30. Danny Cervantes, Water Resources Technician I, was watermaster.

Late December and early January flooding caused destruction of access roads, diversion dams, headgates, ditches, gaging stations, and other measuring devices. Considerable work was needed to get some of these structures back into operation.

The flows were normal for the 1997 watermaster season. The streams flowing from the North Warner Mountains peaked in early May and then slowly declined. The streams flowing from the South Warners peaked in early to mid-June and slowly declined. Spring rains and thunder showers during July, August, and September contributed to the flows in the creeks. Cooler weather in September resulted in increased stream flows.

The Alkali Lakes, which were full at the end of the 1996 irrigation season, remained full during this season. The water levels in the Alkali Lakes remained high enough during this season to encroach upon what is normally the water users lower pastures.

Bidwell Creek

The maximum flow in Bidwell Creek this season was 51cfs, lowering to 4.0 cfs in mid-September and rising to 4.6 cfs at the end of September. Full first priority water was available through mid-June, lowering to one-half of first priority by July 1, when the water right schedule changes. One-half of third priority water in the July 10 - September 30 schedule was available until mid-July, declining to second priority in mid-August, and to one-half of second priority in early September.

Late December and early January flooding caused destruction of access roads, diversion dams, headgates, ditches, gaging stations, and other measuring devices. Considerable work was needed to get some of these structures back into operation.

Mill Creek

The maximum flow in Mill Creek this year was 40 cfs, declining to 1.7 cfs near the end of September. The stream flow was at the middle of the third priority level the first week of April, increasing to above the full priority in April. The flow remained above full priority until early June, declining to the third priority in mid-June, to the second priority near the middle of July, and to first priority flow rate by the end of August.

Soldier Creek

The maximum flow in Soldier Creek this season was 33 cfs, declining to less than one cfs near the end of September. With the exception of lower flows at the beginning of April, full priority water was available until the end of May. The creek flow declined to third priority level the first part of June when the rotation period ended. The flow lowered to second priority rate at the end of June and to the first priority level at the end of August.

Pine Creek

The maximum flow in Pine Creek this irrigation season was 32 cfs. The creek did not become dry this year but was flowing at only 0.1 cfs, measured at the head of the Cressler Ditch, during most of August and September. Three and one-half rotations of water use were completed before the creek flow declined to 4 cfs during the last rotation. On May 16, the flow had decreased to 1.6 cfs and was diverted to the Cressler Ditch.

Cedar Creek

The maximum flow in Cedar Creek this year was 23 cfs, decreasing to 0.5 cfs late in July and rising to 0.6 cfs at the end of September. The water users along lower Cedar Creek diverted water until mid-June.

Deep Creek

The maximum flow in North Deep Creek this season was 21 cfs, decreasing to 0.7 cfs in September. Full priority water was available until the first of June, declining to one half of full priority at the end of June, and to 10 percent of full priority near the end of August. The maximum flow in South Deep Creek this year was 20 cfs, decreasing to 0.6 cfs in September. Full priority water was not available this season. The creek flow decreased to the first priority level in mid-June and to 20 percent of first priority in mid-August.

Cottonwood Creek

The maximum flow in Cottonwood Creek this season was 60 cfs, decreasing to 1.0 cfs in September. Water rotation between tracts 243, 245, 246, and 109 started on May 14 and was completed on July 7, with a double rotation of six days.

Owl Creek

The maximum flow in Owl Creek this year was 53 cfs, lowering to 1.3 cfs in September. The Allen - Arreche Ditch diversion was in service intermittently during June when creek flows permitted; a number of washouts of the ditch banks limited its use. Full priority water was available until mid-June, ninth priority until mid-July, seventh priority until mid-August, and fourth priority water was available until early September.

Rader Creek

The maximum flow in Rader Creek this season was 50 cfs, lowering to 1.4 cfs in September. Water was diverted into the Cockrell Ditch from May 20 until August 10, when the flow no longer reached the place of use. Full priority water was available from mid-May through mid-June, the flow lowering to third priority in early July, and to second priority in early September.

Eagle Creek

The maximum flow in Eagle Creek this year was 63 cfs, receding to 1.7 cfs in September. Full priority water was available from the first of May to the middle of July. The flow lowered to third priority later in July, and to second priority in mid-September.

Emerson Creek

The maximum flow in Emerson Creek this season was 40 cfs, lowering to 3.0 cfs in mid-September and increasing 3.2 cfs at the end of the month. Full priority water was available from mid-May through mid-June. The flow decreased to second priority at the end of June and to one-fourth of second priority at the end of July.

**TABLE 36
DECREES AND RELATED DATA - SURPRISE VALLEY STREAMS**

Stream	Modoc County Superior Court Decree			Service Area Created	No. of Water Right Owners	Total Cfs	Remarks
	No.	Date	Type ^{a/}				
Bidwell	6420	01-13-60	S	03-16-60 ^{b/}	46	63.74	(Schedule 3) 3 priorities March 15-July 9. (Schedule 4) 5 priorities July 10-September 30. If no water passing diversion No. 23 September 30-March 14, 1st priority provisions of Schedule 4 apply.
Mill	3024	12-19-31	CR	12-30-31	38	37.13	One priority on Brown Creek, tributary to Rutherford Creek, 7 priorities on Rutherford Creek, tributary to Mill Creek, 1st and 2nd for year-round use, 3rd and 4th April through September.
Soldier	2045	11-28-28	CR	09-11-29	13 4 ^{c/}	33.50 4.37	Starting March 19 each year, lower users receive water for 4 13-day periods alternating with upper users who receive water for 4 10-day periods, ending June 19. 7 priorities during lower users periods, 8 during upper users periods and 12 for rest of the year. Appropriate License 1566, 1613, 1648, and 1850.
Pine near to Cedarville	3391	12-07-36	CR	01-13-37	5 1 ^{c/}	^{d/} 0.08	One full rotation totaling 693 AF. Rotation continues until flow decreases to 4 cfs, then all water goes to tracts 68 and 70 until flow decreases to 1.60 cfs then all water goes to the R. Bordwell Ranch.
Cedar	1206 2343 ^{d/}	05-22-01 02-15-23	CA CA	06-19-26	12	28.90 ^{d/}	Water rights established by these two decrees and an agreement signed by all users. No. 1206 set 1st and 2nd priorities; No. 2443 3rd priority and agreement the 4th. 28.90 cfs includes 5.00 cfs imported from Thoms Creek on west slope of Warner Mountains.
Deep	3101	01-25-34	CR	12-29-34	11	29.37	Schedule 2 establishes 5 priorities, year-round.
Cottonwood	6903	12-01-64	CA	07-01-77 ^{b/}	8	^{d/}	Water rights based on a percentage of flow in an equal priority.
Owl	2410	04-29-29	CA	09-11-29	8	41.70	21 priorities; all year round but 8th priority, under which each of 3 owners receives his allotment for an 8-day period. Appropriate License No. 2842, 3.54 cfs.
Rader	3626	06-04-37	CR	06-12-37	6	21.00	7 priorities. 7th is for surplus water. Diversions No. 1, 3, 6, and 7 have seasonal limitations.
Eagle	2304 3284	04-05-26 11-05-37	CA CR	01-10-39	36	30.57	Decree No. 3284 added rights in all priority classes, and established 4 classes. 4.50 cfs right of White Pine Lumber Co. is for use March 1 to July 1. Eagleville 'town users', Schedule 2 may divert through Gee & Grider ditches March 15 to October 15 each year. Set 1st priority rights of Gee & Grider ditches, Par. XVII & XVIII, for use April 15 to October 1.
Emerson	2840	03-25-30	CR	4-11-30	10	24.65	4 priorities, 1st is for year-round use, others April 1 to September 30.

^{a/} S-Statutory, CR-Court Reference, CA-Court Adjudication, A-Agreement

^{b/} Added to existing Surprise Valley service area.

^{c/} Appropriate rights junior to the decreed rights.

^{d/} See remarks.

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 37

1997 Daily Mean Discharge
(In cubic feet per second)

BIDWELL CREEK NEAR FORT BIDWELL

DAY	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	NR	NR	44	20	9.0	4.8
2	NR	NR	45	18	9.5	5.0
3	NR	NR	47	12	8.6	4.5
4	NR	NR	46	12	8.0	4.4
5	NR	NR	49	11	7.5	4.8
6	NR	NR	45	9.0	6.3	4.6
7	NR	NR	47	8.5	6.5	4.4
8	NR	NR	44	8.8	7.0	4.3
9	NR	NR	49	10	7.2	4.4
10	NR	NR	51	11	7.0	4.0
11	NR	NR	47	10	7.0	4.0
12	NR	NR	44	9.5	7.3	4.2
13	NR	NR	41	9.8	6.5	4.5
14	NR	NR	40	10	6.0	4.6
15	NR	NR	41	9.6	5.5	4.7
16	NR	NR	42	9.2	6.0	5.0
17	NR	NR	40	9.3	6.2	4.5
18	NR	NR	40	9.2	5.7	4.3
19	NR	NR	38	9.0	6.0	4.0
20	NR	NR	35	9.0	6.2	4.4
21	NR	NR	30	8.7	6.3	4.7
22	NR	NR	30	7.7	6.0	4.5
23	NR	NR	28	8.0	4.8	4.6
24	NR	NR	29	7.0	6.5	4.8
25	NR	NR	28	6.5	6.2	4.5
26	NR	NR	26	5.3	5.5	5.0
27	NR	NR	27	5.8	5.3	4.4
28	NR	NR	25	6.0	5.3	4.2
29	NR	NR	24	6.0	5.1	4.3
30	NR	NR	22	6.0	5.0	4.6
31	---	NR	----	6.0	5.0	----
MEAN	NR	NR	38.6	9.4	6.5	4.5
AC-FT	NR	NR	2,267	560	396	265

NR=No Record

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 38

**1997 Daily Mean Discharge
(In cubic feet per second)**

MILL CREEK ABOVE ALL DIVERSIONS

NO RECORD BECAUSE OF DAMAGE FROM JANUARY 1997 FLOOD

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 39

1997 Daily Mean Discharge
(In cubic feet per second)

SOLDIER CREEK ABOVE ALL DIVERSIONS

DAY	MAR	APR.	MAY	JUNE	JULY	AUG.	SEP.
1	NR	15	19	25	4.0	1.2	1.1
2	NR	7.6	20	28	3.7	1.4	.8
3	NR	8.2	14	30	3.5	1.0	.6
4	NR	8.3	14	33	5.0	1.1	.5
5	NR	9.7	14	31	3.5	1.5	1.0
6	NR	9.5	14	26	3.2	1.3	1.1
7	NR	9.2	21	28	3.3	1.1	1.3
8	NR	9.0	20	28	3.8	1.2	1.4
9	NR	10	21	30	3.0	1.1	1.0
10	NR	13	21	28	3.1	1.1	.8
11	NR	19	22	27	2.8	.9	.7
12	NR	18	24	24	2.7	.7	.8
13	NR	18	22	20	3.0	.8	.7
14	NR	18	21	20	2.1	1.1	1.0
15	NR	19	19	17	2.5	.8	1.1
16	NR	20	18	16	2.5	.7	1.2
17	NR	20	20	17	2.7	.5	1.4
18	NR	18	21	17	3.1	.6	1.3
19	NR	19	21	17	3.0	.9	1.5
20	NR	14	20	15	2.8	.6	1.0
21	NR	18	23	12	2.6	.7	.8
22	NR	20	24	17	2.5	.6	1.0
23	NR	25	24	15	2.2	1.0	1.1
24	NR	21	20	11	1.7	1.1	.8
25	NR	19	16	9.5	1.5	1.5	.7
26	NR	25	17	8.0	1.8	1.6	1.0
27	NR	22	18	6.6	1.6	1.1	1.2
28	21.5	27	18	7.0	1.5	1.2	1.0
29	20.5	25	14	6.5	2.0	.8	1.1
30	20.0	22	22	5.5	1.8	.6	1.2
31	20.0	---	23	---	1.5	.7	---
MEAN	NR	17.1	19.6	19.1	2.8	1.0	1.0
AC-FT	NR	1,016	1,204	1,137	164	61	59

NR = No Record

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 40

1997 Daily Mean Discharge
(In cubic feet per second)

PINE CREEK NEAR CEDARVILLE AT THE DIVERSION OF THE NORTH AND SOUTH CHANNELS

DAY	MAR	APR.	MAY	JUNE	JULY	AUG.	SEP.
1	NR	8.6	13	0.8	0.1	NF	NF
2	NR	7.7	8.3	0.7	0.1	NF	NF
3	NR	6.8	7.0	0.8	0.1	NF	NF
4	NR	6.0	5.0	0.7	0.1	NF	NF
5	NR	5.7	5.0	0.5	0.1	NF	NF
6	NR	5.2	5.0	0.4	0.1	NF	NF
7	NR	5.4	4.6	0.5	0.1	NF	NF
8	NR	4.4	4.4	0.5	0.1	NF	NF
9	NR	4.6	3.6	0.4	0.1	NF	NF
10	NR	5.0	2.7	0.5	0.1	NF	NF
11	NR	4.6	2.7	0.5	0.1	NF	NF
12	NR	5.0	2.5	0.4	0.2	NF	NF
13	NR	5.0	2.4	NF	NF	NF	NF
14	NR	12	2.2	0.3	0.1	NF	NF
15	NR	9.0	2.2	0.4	0.0	NF	NF
16	NR	8.0	2.1	0.3	NF	NF	NF
17	NR	7.7	2.0	0.2	NF	NF	NF
18	NR	8.0	1.8	0.1	NF	NF	NF
19	NR	14	1.8	0.1	NF	NF	NF
20	NR	15	1.7	0.1	NF	NF	NF
21	18	27	1.6	0.1	NF	NF	NF
22	16	29	1.7	0.1	NF	NF	NF
23	15	27	1.6	0.1	NF	NF	NF
24	14	26	1.5	0.1	NF	NF	NF
25	12	22	1.5	0.1	NF	NF	NF
26	14	15	1.3	0.1	NF	NF	NF
27	18	14	1.2	0.1	NF	NF	NF
28	16	14	1.1	0.1	NF	NF	NF
29	10	13	1.0	0.1	NF	NF	NF
30	9	13	1.0	0.1	NF	NF	NF
31	10	---	1.2	0.1	---	NF	---
MEAN	NR	11.6	3.1	0.3	0.1	0	0
AC-FT	NR	689	188	19	3.0	0	0

NF = No Flow
NR = No Record

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 41

**1997 Daily Mean Discharge
(In cubic feet per second)**

CEDAR CREEK AT CEDARVILLE

NO RECORD BECAUSE OF DAMAGE FROM JANUARY 1997 FLOOD

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 42

1997 Daily Mean Discharge
(In cubic feet per second)

NORTH DEEP CREEK ABOVE ALL DIVERSIONS

NO RECORD BECAUSE OF DAMAGE FROM JANUARY 1997 FLOOD

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 43

1997 Daily Mean Discharge
(In cubic feet per second)

SOUTH DEEP CREEK BELOW DIVERSION NO. 2

NO RECORD BECAUSE OF DAMAGE FROM JANUARY 1997 FLOOD

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 44

1997 Daily Mean Discharge
(In cubic feet per second)

COTTONWOOD CREEK FLUME BELOW PAGE DITCH

DAY	APR.	MAY	JUNE	JULY	AUG.	SEP.
1	NR	NR	44	7.5	2.0	1.1
2	NR	NR	45	8.1	1.7	1.4
3	NR	NR	47	8.0	1.8	1.2
4	NR	NR	50	7.5	2.1	1.0
5	NR	NR	51	7.2	2.3	1.2
6	NR	NR	48	6.8	1.8	1.7
7	NR	NR	45	7.3	2.0	1.8
8	NR	NR	48	7.0	1.5	1.0
9	NR	NR	51	6.5	1.9	1.3
10	NR	NR	50	6.8	1.8	1.4
11	NR	NR	57	7.2	2.0	1.0
12	NR	NR	55	7.8	2.3	1.2
13	NR	NR	52	7.0	2.2	1.1
14	NR	NR	55	5.8	2.1	1.3
15	NR	NR	50	6.5	2.4	1.6
16	NR	NR	48	7.0	1.7	1.6
17	NR	NR	45	6.5	1.5	1.5
18	NR	NR	40	4.5	2.3	1.4
19	NR	NR	41	5.0	2.1	1.2
20	NR	NR	38	3.8	1.9	1.3
21	NR	NR	22	2.5	1.5	1.5
22	NR	NR	20	2.2	1.7	1.1
23	NR	NR	32	1.4	1.4	1.0
24	NR	NR	30	1.3	1.0	1.1
25	NR	NR	26	1.5	1.3	1.3
26	NR	NR	23	1.7	1.2	1.0
27	NR	NR	21	1.8	1.6	1.1
28	NR	NR	9.0	2.0	1.7	1.4
29	NR	NR	8.8	2.2	1.5	1.2
30	NR	NR	8.1	2.1	1.8	1.4
31	---	NR	---	2.0	1.4	---
MEAN	NR	NR	40.1	5.1	1.8	1.3
AC-FT	NR	NR	2,391	307	111	77

NR = No Record

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 45

1997 Daily Mean Discharge
(In cubic feet per second)

OWL CREEK BELOW ALLEN-ARRECHE DITCH

NO RECORD BECAUSE OF DAMAGE FROM JANUARY 1997 FLOOD

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 46

**1997 Daily Mean Discharge
(In cubic feet per second)**

RADER CREEK BELOW COCKRELL DIVERSION

NO RECORD BECAUSE OF DAMAGE FROM JANUARY 1997 FLOOD

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 47

1997 Daily Mean Discharge
(In cubic feet per second)

EAGLE CREEK NEAR EAGLEVILLE

DAY	APR.	MAY	JUNE	JULY	AUG.	SEP.
1	NR	NR	NR	NR	3.0	1.6
2	NR	NR	NR	NR	3.0	1.8
3	NR	NR	NR	NR	2.7	1.9
4	NR	NR	NR	NR	2.5	2.0
5	NR	NR	NR	NR	3.1	1.8
6	NR	NR	NR	NR	2.2	1.7
7	NR	NR	NR	NR	2.4	1.6
8	NR	NR	NR	NR	2.3	1.8
9	NR	NR	NR	NR	1.8	1.6
10	NR	NR	NR	NR	1.7	1.5
11	NR	NR	NR	NR	1.8	1.4
12	NR	NR	NR	NR	2.3	1.2
13	NR	NR	NR	NR	2.1	1.5
14	NR	NR	NR	NR	2.6	1.7
15	NR	NR	NR	NR	2.3	1.8
16	NR	NR	NR	NR	2.1	1.6
17	NR	NR	NR	NR	3.5	1.7
18	NR	NR	NR	NR	2.1	1.8
19	NR	NR	NR	NR	2.1	1.8
20						
21	NR	NR	NR	NR	2.3	1.8
22	NR	NR	NR	NR	2.0	1.7
23	NR	NR	NR	NR	2.3	1.5
24	NR	NR	NR	NR	2.2	1.5
25	NR	NR	NR	NR	1.7	1.3
26	NR	NR	NR	NR	1.8	1.5
27	NR	NR	NR	NR	2.2	1.2
28	NR	NR	NR	NR	2.1	1.7
29	NR	NR	NR	NR	2.4	2.2
30	NR	NR	NR	NR	2.0	2.1
31	---	NR	---	NR	1.8	---
MEAN	NR	NR	NR	NR	2.3	1.7
AC-FT	NR	NR	NR	NR	141	101

NR = No Record

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 48

1997 Daily Mean Discharge
(In cubic feet per second)

EMERSON CREEK ABOVE ALL DIVERSIONS

DAY	APR.	MAY	JUNE	JULY	AUG.	SEP.
1	13.5	17.0	16.0	7.1	3.7	3.2
2	13.0	17.8	16.1	7.3	3.6	3.4
3	14.0	17.2	16.2	7.5	3.1	3.3
4	12.0	16.0	16.8	7.3	3.2	3.0
5	12.2	15.5	16.3	7.1	3.8	3.2
6	12.8	17.0	16.0	7.2	3.7	3.4
7	15.0	17.2	16.7	7.0	3.5	3.2
8	14.4	18.0	17.1	7.1	3.1	3.6
9	16.0	17.3	17.2	6.7	3.2	3.5
10	15.0	16.3	18.2	7.0	3.8	3.2
11	15.4	16.7	17.7	6.1	3.7	3.3
12	15.0	17.2	17.0	5.8	3.5	3.2
13	13.0	18.3	16.5	5.2	3.2	3.1
14	14.0	18.0	15.4	5.4	3.0	2.8
15	12.5	22.0	17.0	5.5	3.2	3.2
16	13.0	18.7	19.0	4.7	3.5	3.5
17	13.3	15.7	23.0	4.0	3.8	3.6
18	12.0	16.2	17.0	5.0	3.2	3.3
19	10.0	17.3	17.5	4.6	3.5	3.1
20	11.0	16.0	13.3	4.2	3.5	3.0
21	10.0	16.2	11.2	4.5	3.3	3.1
22	11.0	15.7	10.8	4.6	3.6	3.4
23	14.2	14.2	10.6	4.4	3.6	3.5
24	14.0	15.3	10.4	4.5	3.5	3.4
25	15.3	14.0	10.0	4.3	3.4	3.2
26	15.6	11.0	9.0	4.0	3.6	3.3
27	15.3	12.7	8.5	4.2	3.5	3.5
28	15.0	13.8	8.0	4.3	3.4	3.1
29	16.0	16.0	8.1	3.6	3.1	3.1
30	16.3	16.4	8.2	4.0	3.3	3.3
31	---	16.2	—	3.9	3.2	---
MEAN	13.7	16.4	14.5	5.5	3.4	3.3
AC-FT	812	1,004	863	338	210	194

SUSAN RIVER WATERMASTER SERVICE AREA

SUSAN RIVER WATERMASTER SERVICE AREA

The Susan River Service Area is in southern Lassen County near Susanville. The area of water use is in Honey Lake Valley between Susanville and the northwest shore of Honey Lake, a stretch of about 25 miles. The valley floor is at an elevation of about 4,000 feet. Water comes from three stream systems: Susan River, Baxter Creek, Parker Creek, and their respective tributaries.

The Susan River originates in the Cascade Range east of Lassen National Park at an elevation of approximately 7,900 feet. It runs east from Silver Lake through McCoy Flat Reservoir, the town of Susanville, and then to Honey Lake.

The river has four major tributaries: Piute Creek, entering from the north at Susanville; Gold Run and Lassen Creeks, entering from the south between Susanville and Johnstonville; and Willow Creek, entering from the north above Standish. Gold Run and Lassen Creeks rise on the north slope of Diamond Mountain at an elevation of about 7,600 feet. The watersheds of Piute and Willow Creeks are on the south slopes of Round Valley Mountain at lower elevations.

The Susan River divides into three channels a short distance below its confluence with Willow Creek. The channels are Tanner Slough Channel on the north, Old Channel in the middle, and Dill Slough Channel on the south. Hartson Slough and Whitehead Slough divert from Dill Slough on its south bank downstream.

The Baxter Creek stream system is in Honey Lake Valley on the east side of the Sierra Nevada, about 10 miles southeast of Susanville. The main creeks in the system are Baxter Creek, which rises on the west side of the basin and flows east, and Elesian, Sloss, and Bankhead Creeks, tributaries of Baxter Creek from the south.

Parker Creek is also in Honey Lake Valley on the east slope of the Sierra Nevada, about 15 miles southeast of Susanville. It rises on the east side of Diamond Mountain and flows east for about 5 miles into Honey Lake.

Basis of Service

The water of Susan River and its tributaries is distributed according to the water rights defined in Decree No. 4573, Lassen County Superior Court, entered on April 18, 1940. Schedule 3 of the decree defines the right to the use of water from Willow Creek in Willow Creek Valley, Lower Willow Creek, and the Susan River Delta below the Colony Dam. Schedule 4 of the decree defines the rights to the use of water from Gold Run, Piute, Hills, Holtzclaw, and Lassen Creeks above their confluence with the Susan River.

Schedules 5 and 6 of the decree defines the right to the use of water from the Susan River, exclusive of its tributaries. The decree establishes three priority classes on the Susan River and Gold Run Creek, two on Willow Creek, and one each on Piute and Hills Creeks. The water of Baxter Creek and its tributaries is distributed according to the water rights defined in the statutory adjudication as set forth in Decree No. 8174, Lassen County Superior Court, dated December 15, 1955. Schedule 3 of the decree defines the rights to the use of water from Baxter and Elesian Creeks. The Baxter Creek rights are divided into five priority classes.

The water of Parker Creek and its tributaries is distributed according to the water rights defined by a statutory adjudication as set forth in Decree No. 8175, Lassen County Supersior Court, dated December 15, 1955. Schedule 3 of the decree defines the rights to the use of water from Parker Creek, with four priority classes.

The Susan River Watermaster Service Area was created by order of the Department of Water Resources on November 10, 1941. The Baxter and Parker Creeks' stream systems were added to the Susan River service area on February 16, 1956.

Water Supply

Water in the Susan River Service Area comes from two major sources: snowmelt runoff and springs. Snowpack in the Willow Creek Valley and Piute Creek watersheds, which contain more than half the Susan River stream system, melts early in the spring and is usually depleted by May 1. Irrigation requirements from this part of the stream system are then almost entirely dependent on the flow of springs that are relatively constant throughout the year.

Under average flow conditions, Lassen, Gold Run, Baxter, and Parker Creeks and the Susan River above Susanville are sustained by snowmelt runoff until early June. The flow from perennial springs in this portion of the system is comparatively small.

The Lassen Irrigation Company stores supplemental water in Hog Flat and McCoy Flat Reservoirs, on the headwaters of the Susan River. This stored water is released into the Susan River channel and joins the natural flow, usually during June and July. However, the facilities for releasing water stored in Lake Leavett was destroyed early in the season causing all of the winter stored water to be lost. A temporary Coffor Dam enabled the company to satisfy it's shareholders through the season. The facility was repaired in October and November.

Records of daily mean discharge of the several stream gaging stations in the service area are presented in Tables 49 through 57.

Method of Distribution

A major portion of the irrigation in the Susan River Service Area is done by flooding. Water is supplied to the area from the Susan River, tributaries to the river, and other minor streams. The distribution of water is provided by a system of diversion dams, canals and ditches. Included in the operation of the service area are three reservoirs owned and operated by the Lassen Irrigation Company which are McCoy Flat Reservoir, Hog Flat Reservoir, and Lake Leavitt.

1997 Distribution

This is the 56th annual report on watermaster service in the Susan River Watermaster Service Area and covers the period of distribution beginning March 1 and continuing until November 1. Virgil D. Buechler, Water Resources Engineering Associate, was the watermaster.

Streamflow conditions for 1997 were normal early on becoming less than normal towards the end of the season.

Parker Creek

First priority water rights were served through the summer.

Baxter

Upper Baxter Creek had a surplus of 10 cfs past the lower user until May 19, then maintained 1 cfs or more to the Long Ditch through June when the creek dried up.

Hills Creek

The water supply in Hills Creek filled Emerson Lake and spilled through July.

Gold Run Creek

There was excess of 16 cfs or 100 percent of all water rights through May 15 decreasing to the low for the summer of 1.5 cfs on August 7.

Piute Creek

Piute Creek flooded in March causing house damage and closing Susanville's Main Street. The spring-fed water supply satisfied all allotments for the summer.

Susan River

There was excess water through the end of June with normal flow the rest of the watermaster season.

Lassen Irrigation Company Reservoirs

Inflow to McCoy Reservoir was sufficient to cause spilling through March. The measuring equipment was washed out during the winter storms. Instantaneous flows were observed as published in Table 55. Hog Flat did not spill. Lake Leavitt Dam repairs were completed last fall with spillage this spring.

Lower Susan River Below the Confluence of Willow Creek

The Lower Susan River flooded in early spring decreasing to 4.6 cfs on July 7 with a minimum flow of .4 cfs on September 9.

Lassen and Holtzslaw Creek

Lassen Creek had an excess of 0.50 cfs past Highway 395 through August 1 and gradually dried up.

Willow Creek

Willow Creek was flooded until early summer. Willow Creek reached its low-flow point of 7.3 cfs on September 2 . Sufficient stock water was available through the end of the watermaster season.

SUSAN RIVER WATER MASTER SERVICE AREA

TABLE 49

1997 Daily Mean Discharge
(In cubic feet per second)

SUSAN RIVER AT SUSANVILLE

DAY	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	99	184	166	33	96	73	17
2	99	158	112	29	93	82	16
3	98	146	99	29	89	83	15
4	102	136	83	49	88	86	14
5	99	125	74	40	87	84	13
6	96	117	72	32	87	82	13
7	98	111	72	27	86	82	12
8	98	107	72	30	83	86	11
9	99	110	73	38	85	83	11
10	102	101	72	34	85	82	11
11	123	93	74	29	84	88	11
12	123	89	75	30	84	85	11
13	114	87	77	40	83	82	11
14	116	87	77	31	82	88	11
15	143	87	74	26	81	86	13
16	213	89	70	23	82	82	13
17	280	88	64	20	82	90	12
18	251	97	60	18	82	85	14
19	245	196	55	79	82	77	16
20	262	297	52	102	82	74	16
21	312	456	49	100	81	65	16
22	331	686	48	96	79	55	16
23	338	589	46	93	80	49	16
24	337	362	45	89	81	45	16
25	334	299	43	85	82	40	17
26	352	234	41	81	39	35	17
27	382	221	41	85	13	30	17
28	368	152	40	88	12	27	17
29	338	141	39	89	12	23	18
30	237	173	37	95	12	21	18
31		----	33	----	12	18	----
MEAN	207	194	65.6	54.7	71.2	66.7	14.3
AC FT	12,710	11,540	4,036	3,253	4,376	4,102	851

**SUSAN RIVER WATERMASTER SERVICE AREA
TABLE 50**

1997 Daily Mean Discharge
(In cubic feet per second)

SUSAN RIVER AT COLONY DAM

DAY	MAR.	APR.	MAY	JUN E	JULY	AUG.	SEP.
1	NR	NR	65	32	6.7	4.6	2.4
2	NR	NR	61	30	5.9	3.9	1.4
3	NR	NR	61	30	5.9	3.4	1.4
4	NR	NR	55	32	5.9	3.4	1.4
5	NR	NR	49	32	4.6	3.4	0.8
6	NR	NR	43	32	4.6	3.4	0.8
7	NR	70	37	32	4.6	3.9	0.8
8	NR	68	32	33	4.6	4.6	0.8
9	NR	68	25	33	4.6	5.1	0.4
10	NR	38	12	33	4.6	4.6	0.4
11	NR	38	27	33	4.6	3.9	0.4
12	NR	68	27	33	4.6	3.4	0.8
13	NR	65	29	33	4.6	3.4	1.5
14	NR	63	32	33	4.6	3.4	1.8
15	NR	63	29	33	4.6	3.4	2.4
16	NR	63	28	33	5.9	3.4	3.4
17	NR	63	27	27	6.5	3.4	4.4
18	NR	63	28	23	7.3	3.4	4.4
19	NR	63	29	21	7.3	3.4	4.4
20	NR	63	32	19	7.6	4.4	4.4
21	NR	63	37	18	7.3	4.4	4.4
22	NR	63	33	14	6.7	4.4	4.4
23	NR	63	34	10	6.7	4.4	4.6
24	NR	63	36	6.5	4.6	4.4	4.6
25	NR	63	37	8.8	4.6	4.4	4.6
26	NR	63	37	6.5	4.6	4.6	3.4
27	NR	63	39	6.7	4.6	4.6	2.4
28	NR	65	35	6.7	4.6	4.6	2.4
29	NR	65	34	6.7	4.6	4.9	2.4
30	NR	65	34	6.7	4.6	4.6	3.4
31	NR	----	33	----	4.6	2.4	----
MEAN	NR	NR	36	23.3	5.4	4.0	2.5
AC FT	NR	NR	2216	1,,384	331	245	149

SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 51
1997 DAILY MEAN DISCHARGE
(In cubic feet per second)

GOLD RUN CREEK NEAR SUSANVILLE^{1/}

DAY	APR.	MAY	JUNE	JULY	AUG.	SEP.
1	NR	NR	NR	NR	NR	NR
2	NR	NR	NR	NR	NR	NR
3	NR	NR	NR	NR	NR	NR
4	NR	NR	NR	NR	NR	NR
5	NR	NR	NR	NR	NR	NR
6	NR	NR	NR	NR	NR	NR
7	NR	NR	NR	NR	NR	NR
8	NR	NR	NR	NR	NR	NR
9	NR	NR	NR	NR	NR	NR
10	NR	NR	NR	NR	NR	NR
11	NR	NR	NR	NR	NR	NR
12	NR	NR	NR	NR	NR	NR
13	NR	NR	NR	NR	NR	NR
14	NR	NR	NR	NR	NR	NR
15	NR	NR	NR	NR	NR	NR
16	NR	NR	NR	5	NR	NR
17	NR	NR	NR	NR	NR	NR
18	NR	NR	NR	NR	NR	NR
19	NR	NR	NR	NR	NR	NR
20	NR	NR	NR	NR	NR	NR
21	NR	NR	NR	NR	NR	NR
22	NR	NR	NR	NR	NR	NR
23	NR	NR	NR	NR	NR	NR
24	NR	NR	12	NR	NR	NR
25	NR	NR	NR	NR	NR	NR
26	NR	NR	NR	NR	NR	NR
27	NR	NR	NR	NR	NR	NR
28	NR	NR	NR	NR	NR	NR
29	30	NR	NR	NR	2.0	NR
30	NR	NR	NR	NR	NR	NR
31	---	NR	---	2.7	NR	---
MEAN	NR	NR	NR	NR	NR	NR
AC-FT	NR	NR	NR	NR	NR	NR

NR = No Record

^{1/} = Instantaneous Flow data unavailable

SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 52

1997 Daily Mean Discharge
(In cubic feet per second)

WILLOW CREEK (ABOVE MAPES BIG SPRINGS) NEAR SUSANVILLE

DAY	APR.	MAY	JUNE	JULY	AUG.	SEP.
1	NR	NR	NR	NR	NR	3.8
2	NR	NR	NR	NR	NR	4.7
3	NR	NR	NR	NR	NR	4.8
4	NR	NR	NR	NR	NR	5.0
5	NR	NR	NR	NR	NR	5.0
6	NR	NR	NR	NR	NR	5.0
7	NR	NR	NR	NR	NR	5.2
8	NR	NR	NR	NR	NR	5.2
9	NR	NR	NR	NR	NR	5.2
10	NR	NR	NR	NR	NR	5.2
11	NR	NR	NR	NR	3.4	5.4
12	NR	NR	NR	NR	3.4	5.4
13	NR	NR	NR	NR	3.4	5.4
14	NR	NR	NR	NR	3.4	5.2
15	NR	NR	NR	NR	3.4	5.2
16	NR	NR	NR	NR	4.7	5.2
17	NR	NR	NR	NR	5.6	5.0
18	NR	NR	NR	NR	5.6	5.0
19	NR	NR	NR	NR	5.6	5.0
20	NR	NR	NR	NR	4.1	4.8
21	NR	NR	NR	NR	2.9	4.8
22	NR	NR	NR	NR	2.9	5.2
23	NR	NR	NR	NR	2.9	5.6
24	NR	NR	NR	NR	2.9	6.0
25	NR	NR	NR	NR	2.9	6.6
26	NR	NR	NR	NR	2.9	9.6
27	NR	NR	NR	NR	2.9	9.6
28	NR	NR	NR	NR	2.9	9.6
29	NR	NR	NR	NR	2.9	9.6
30	NR	NR	NR	NR	2.9	9.6
31	----	NR	----	NR	2.9	----
MEAN NR	NR	NR	NR	NR	5.9	
AC-FT	NR	NR	NR	NR	NR	350

NR = No Record

SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 53

1997 Daily Mean Discharge
(In cubic feet per second)

WILLOW CREEK AT COLONY DAM

DAY	APR.	MAY	JUNE	JULY	AUG.	SEP.
1	NR	43	22	16	10	7.9
2	NR	42	23	16	10	7.3
3	NR	41	23	15	10	7.3
4	NR	37	22	14	10	7.3
5	NR	37	22	14	9.8	7.3
6	NR	32	22	14	9.8	7.3
7	56	32	21	14	9.8	7.3
8	56	32	21	14	10	7.9
9	56	26	21	14	10	8.8
10	56	26	21	14	10	8.8
11	57	29	21	14	10	9.5
12	57	27	21	14	10	21
13	57	27	21	14	11	10
14	57	27	21	13	11	10
15	57	27	20	13	11	10
16	56	26	20	12	11	10
17	55	25	18	12	11	11
18	55	25	18	11	11	11
19	55	24	18	11	11	10
20	54	22	14	11	10	10
21	52	20	14	12	10	8.8
22	51	18	14	13	10	8.8
23	50	18	13	12	10	8.8
24	50	21	14	10	10	7.9
25	50	21	14	10	10	8.8
26	49	21	13	10	10	10
27	49	22	13	10	10	12
28	49	23	14	10	10	12
29	46	23	15	10	10	12
30	43	24	15	10	9.8	12
31	---	25	---	10	8.8	---
MEAN	NR	27.2	18.2	12.5	10.2	9.7
AC-FT	NR	1,672	1,085	768	625	577

NR = No Record

SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 54

1997 Daily Mean Discharge
(In cubic feet per second)

DILL SLOUGH NEAR STANDISH

DAY	APR.	MAY	JUNE	JULY	AUG.	SEP.
1	NR	NR	8.8	7.9	6.2	2.4
2	NR	NR	8.2	7.9	5.7	2.7
3	NR	NR	8.2	7.9	5.7	3.1
4	NR	NR	8.2	7.9	5.7	3.5
5	NR	NR	8.2	7.9	5.7	3.9
6	NR	NR	7.9	7.7	5.7	4.3
7	NR	NR	7.9	7.7	5.7	4.8
8	NR	20	7.9	7.7	5.7	5.2
9	NR	20	7.9	7.7	6.2	5.7
10	NR	20	7.9	7.4	6.2	6.2
11	NR	20	7.9	7.4	6.2	6.2
12	NR	20	7.9	7.2	6.7	6.2
13	NR	20	7.9	7.2	6.7	6.7
14	NR	20	6.7	7.2	6.7	6.7
15	NR	20	6.7	6.9	7.2	6.7
16	NR	20	6.7	6.9	7.2	7.2
17	NR	20	3.9	6.9	7.2	7.2
18	NR	20	3.9	6.9	7.7	7.7
19	NR	20	3.9	6.9	7.7	7.7
20	NR	20	3.9	6.9	7.9	7.7
21	NR	20	11	6.9	6.4	7.7
22	NR	20	11	6.9	6.4	7.7
23	NR	19	11	6.9	5.9	7.9
24	NR	19	11	6.7	4.3	7.9
25	NR	19	11	6.7	4.3	7.9
26	NR	19	6.2	6.7	4.3	7.9
27	NR	19	6.2	6.7	3.3	7.9
28	NR	19	6.2	6.2	2.4	7.9
29	NR	19	6.7	6.2	2.0	7.9
30	NR	18	6.7	6.2	2.0	7.9
31	----	9.3	----	6.2	2.0	----
MEAN	NR	NR	7.1	5.6	6.3	4.9
AC-FT	NR	NR	451	437	345	377

NR = No Record

SUSAN RIVER WATERMASTER SERVICE AREA
TABLE 55
1997 Daily Mean Discharge
(In cubic feet per second)
OPERATION OF MCCOY AND HOG FLAT RESERVOIRS

DAY	McCoy Flat Reservoir Inflow from Susan River			McCoy Flat Reservoir Release to Susan River			Hog Flat Reservoir Release to Susan River		
	MAY	JUNE	JULY	JUNE	JULY	AUG	JULY	AUG.	SEP.
1	NR	NR	NR	0.0	7.3	NF	NR	71	8.8
2	NR	NR	NR	0.0	73	NF	NR	72	6.2
3	NR	NR	NR	0.4	73	NF	NR	72	2.4
4	NR	NR	NR	0.0	73	NF	NR	70	NF
5	NR	NR	NR	0.0	73	NF	NR	68	NF
6	NR	NR	NR	0.0	71	NF	NR	68	NF
7	NR	NR	NR	0.0	71	NF	NR	70	NF
8	NR	NR	NR	0.0	72	NF	NR	70	NF
9	NR	NR	NR	0.0	72	NF	NR	68	NF
10	NR	NR	NR	0.0	72	NF	NR	68	NF
11	NR	NR	NR	0.0	71	NF	NR	67	NF
12	NR	NR	NR	0.0	71	NF	NR	61	NF
13	NR	NR	NR	0.0	71	NF	NR	67	NF
14	NR	NR	NR	0.0	69	NF	NR	68	NF
15									
16	NR	NR	NR	0.0	69	NF	NR	70	NF
17	NR	NR	NR	0.0	69	NF	NR	67	NF
18	NR	NR	NR	47	67	NF	NR	63	NF
19	NR	NR	NR	71	66	NF	NR	58	NF
20	NR	NR	NR	70	65	NF	NR	54	NF
21	NR	NR	NR	70	65	NF	NR	46	NF
22	NR	NR	NR	69	65	NF	NR	41	NF
23	NR	NR	NR	69	63	NF	NR	35	NF
24	NR	NR	NR	69	63	NF	NR	31	NF
25									
26	NR	NR	NR	71	0.2	NF	NR	25	NF
27	NR	NR	NR	75	0.0	NF	NR	21	NF
28	NR	NR	NR	75	0.0	NF	NR	18	NF
29	NR	NR	NR	75	0.0	NF	NR	18	NF
30	NR	NR	NR	75	0.0	NF	NR	14	NF
31	NR	---	NR	0.0	NF	NF	23	10	NF
MEAN	NR	NR	NR	30.2	55.2	NF	NR	52.4	0.6
AC-FT	NR	NR	NR	1,796	3,394	NF	NR	3,323	34

NR = No Record
NF = No Flow

SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 56

1997 Daily Mean Discharge
(In cubic feet per second)

A AND B CANAL ABOVE LAKE LEAVITT

DAY	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.
1	NR	10	88	0.0	65	3.4	0.5
2	NR	16	80	0.0	65	36	0.3
3	NR	16	68	0.0	61	59	0.3
4	NR	15	65	0.0	61	60	
5	NR	14	63	0.0	58	57	NF
6	37	25	49	0.0	56	61	NF
7	38	46	37	0.0	60	61	NF
8	40	60	23	0.0	63	63	NF
9	40	55	19	0.0	60	65	NF
10	41	63	31	0.0	63	61	NF
11	47	65	32	0.0	63	65	NF
12	46	65	55	0.0	63	65	NF
13	44	66	35	0.0	59	61	NF
14	42	66	26	0.0	68	71	NF
15	45	65	26	0.0	66	42	NF
16	40	67	21	0.0	65	41	NF
17	46	70	12	0.0	65	43	NF
18	20	67	6.7	7.3	64	49	NF
19	7.7	82	13	7.3	64	58	NF
20	10	98	6.2	59	52	54	NF
21	7.9	131	5.9	65	34	46	NF
22	14	65	5.9	65	37	42	NF
23	14	55	10	68	37	41	NF
24	19	61	8.8	67	37	35	NF
25	23	63	2.4	65	43	28	NF
26	18	50	0.0	58	40	15	NF
27	16	75	0.0	53	12	2.5	NF
28	14	74	0.0	52	3.4	18	NF
29	19	82	0.0	54	3.4	16	NF
30	12	91	0.0	56	3.4	12	NF
31	13	----	0.0	----	3.4	0.9	NF
MEAN	NR	59.3	25.4	22.6	48.2	43.0	NF
AC-FT	NR	3,527	1,565	1,342	2,964	2,642	NF

NF = No Flow
NR = No Record